

Chemistry 1B/1BL Summer Quarter 2009

Chem. 1B (01669) MWF 8:30 – 9:20 AM Broida 1640

Instructor: Tom Hooker Office: PSBN 2660

Email: hooker@chem.ucsb.edu

Office Hours: Mon 11-12, Wed 10-11 and by drop-in or appointment (805) 895-9744

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

Exams: There will be two midterms and a final. No make-up exams will be given.

Grades: Grades are determined from your homework and exams as follows:

Homework – 15 pts, Exam 1 – 100 pts, Exam 2 – 100 pts, Final – 200 pts

Final Exam: Saturday August 29 8:00 – 11:00 AM Broida 1640

APPROXIMATE LECTURE SCHEDULE

LAB SCHEDULE

Week	Date	Topic	Chapter	Chem. 1BL Lab Assignment
1	June 22 – 26	Energy, Enthalpy, and Thermochemistry	9	Check-In / Syllabus / Safety Answer Pre-Lab Questions Exp. 8
2	June 29 – July 3 Holiday Fri. July 3	Spontaneity, Entropy, and Free Energy	9 10	Exp. 8: Acid-Base Equilibria
3	July 6 – 10	Spontaneity, Entropy	10	Exp. 9: Thermochemistry
4	July 13 – 17 Exam 1	Spontaneity, Entropy Exam 1 Wed. July 15 Electrochemistry	10 11	Exp. 10: Oxidation of Vitamin C
5	July 20 – 24	Electrochemistry	11	Exp. 11: Electrochemistry
6	July 27 – 31	Chemical Kinetics	15	Exp. 12: Electrochemical Cells
7	Aug. 3 – 7 Exam 2	Chemical Kinetics Exam 2 Wed. Aug. 5	15	Exp. 13: Chemical Kinetics
8	Aug. 10 – 14	Atomic Theory	12	Exp. 14: Atomic Spectroscopy Check-out
9	Aug. 17 – 21	Atomic Theory / Bonding	12 13	Lab Final Review / Quiz
10	Aug. 24 – 28	Bonding	13	Lab Final Thursday Aug. 27, 7:30-9:30 PM, Chem. 1179

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. **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: Wed 3 – 4 PM or by appointment

Lab Final Exam: Thursday August 27 7:30 – 9:30 PM Chem. 1179

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 lab notebook are required (both of these 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. Chem. 1BL is a one-unit course separate from the lecture course but intended to accompany it.

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 hours every day; **TA Office hours;** **Your instructor** is also available to help. 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