Chemistry 1A/1AL Spring Quarter 2009

Chem. 1A (05686) MWF 11 – 11:50 AM Buchanan 1910

Instructor: Tom Hooker Office: PSBN 2660 hooker@chem.ucsb.edu

Office Hours: Mon 12–1 PM, Wed 9–10 AM, and by drop-in or appointment (893-2127)

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

Exams: There will be 2 midterms, quizzes 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: Thursday June 11 12 noon – 3 PM BUCHN 1910

APPROXIMATE LECTURE SCHEDULE **LAB SCHEDULE**

Week	*Date*	*Topic*	*Chapter*	*Chem. 1AL Lab Assignment*
1	Mar 30 – Apr 3	Atoms, Molecules and Ions	**2**	Safety Video, Safety Quiz, Check-In
2	April 6 – 10	Stoichiometry	**3**	Experiment 1: Introduction Lab
3	April 13 – 17	Stoichiometry Chemical Reactions	**3** **4**	Experiment 2 Nomenclature/Reaction Stoichiometry
4	**Exam 1** April 20 – 24	**Exam 1 Wed Apr 22** Chemical Reactions	**4**	Experiment 3: Analysis of Water
5	Apr 27 – May 1	Chemical Reactions Gases	**4** **5**	Experiment 4 Determination of a Chemical Formula
6	May 4 – 8	Gases Chemical Equilibrium	**5** **6**	Experiment 5 Molar Volume of Gases
7	May 11 – 15 **Exam 2**	Chemical Equilibrium **Exam 2 Fri May 15**	**6**	Experiment 6 Equilibrium Constant Determination
8	May 18 – 22	Acids and Bases	**7**	Exp. 7 Antacid Analysis Check-out
9	May 25 May 27 – 29	**Holiday Monday May 25** Acids and Bases Aqueous Equilibria	**7** **8**	**No Lab this week**
10	June 1 – 5	Aqueous Equilibria	**8**	Lab Final Review

WebAssign homework assignments due the same days as the exams:

Assignment 1 (5 pts): Due Wednesday April 22
Assignment 2 (5 pts): Due Friday May 15
Assignment 3 (10 pts): Due Thursday June 11

CHEM 1AL GENERAL CHEMISTRY LABORATORIES

Chemistry 1AL is designed to demonstrate and reinforce the basic concepts of stoichiometry, chemical bonding, atomic structure, gas laws, chemical equilibrium and acid-base chemistry. The analytical methods learned in Chem. 1AL are applicable to many other scientific disciplines such as Biology, Medicine, Environmental Science, Physics and Engineering. Chem. 1AL is a one-unit course separate from the lecture course but intended to accompany it.

Laboratory Coordinator: Petra van Koppen, PSBN 3670 B. Email: vankoppen@chem.ucsb.edu
Office hours: Thursday 2 – 3 PM or by appointment

Lab Final Exam: Saturday June 6 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, June 5, 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. 1A and 1AL 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 1A

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 is available in the bookstore. Never look at the answers first. Always try to do the problems by reading and reviewing the material in the text.

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 problems in addition to those assigned. **Work all the examples in Chapters 2 through 8**.

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

Chapter 2: It is beneficial to memorize Table 2.3 and 2.5 (names of common ions), Table 2.6 (prefix names) Table 2.7, 2.8 (names of acids). See summary of Tables: Appendix 7, lab manual. Problems: 18,32,34,36,37,38,39,40,41,42,46,47,48,49,50,53,58,59,64
Chapter 3: 25,26,30,31,32,34,38,39,46,49,50,53,56,57,58,65,66,70,71,72,73
Chapter 4: Memorize Table 4.1 (solubility rules) Problems: 11,15,16,17,18,20,24,25,30,31,33,39,43, 48,49,53,55,57,58,61,62,65,66,74
Chapter 5: 8,11,27,30,32,38,39,42,45,49,50,56,59,60,65,66,73,74,75,77,78,82,83,84,85,86,105,111
Chapter 6: 10,13,19,21,22,23,24,25,27,29,30,33,34,35,36,39,40,46,48,49,50,51,52,53,58,59,62,65,66
Chapter 7: 16,20,23,24,25,26,27,29,32,33b,c,35,39,41,42,43,45,46,53,55,57,58,59,62,63,65,85,87,89,107
Chapter 8: 15,16,19,20,21,22,23,25,29,33,36,37,38,40,46,51,54,55,81,87,88,102,118

See Course Pages on the Chemistry and Biochemistry Department WEBSITE: www.chem.ucsb.edu