

Professor Jack I. Morrow  
General Information, Syllabus, & Problems  
Chem S14O3D-S14O4Q Summer Session 2002

Required Text: OXTOBY, NACHTREIB, AND FREEMAN  
"Chemistry - Science of change" 3rd edition

" Student Solutions Manual" (can be purchased in bookstore)

" Instructor's Manual" (can be viewed in Chemistry library)

Helpful Suggestions:

- 1) Pre-read the chapters to be discussed at least one week ahead of their coverage in lecture. This will introduce you to the terminology used and the concepts to be discussed. If you have done the above, then take lecture notes, only on what is not covered in the book and on topics that clarify points presented in the book. Try to avoid voluminous note taking, but rather, limit them to the more pertinent and/or more conceptually difficult points of the text. In this way you might succeed in hearing the lecture.
- 2) Go over the topics covered in lecture as soon as possible to consolidate the information and concepts as quickly as possible. Delay in doing this will only lead to loss of knowledge and especially loss of some of the more subtle points. In addition, concepts that are still not clear can be questioned in the next lecture or recitation section.
- 3) Do the assigned problems from the Oxtoby text as soon as possible. Remember if you cannot do the problems you don't understand the concepts. If you have difficulty doing one or more problem(s) come for help immediately, to either the recitation TA or to me. In coming for help, bring us the uncompleted work you have already done on the problem. This will make it much easier to determine exactly where you are having difficulty.
- 4) YOU WILL FIND IT HELPFUL TO FORM SMALL STUDY GROUPS WITH THREE TO FIVE OF YOUR FELLOW STUDENTS TO REVIEW THE HOMEWORK. IF YOU DO THIS, TAKE TURNS EXPLAINING HOW YOU ARRIVED AT AN ANSWER TO A PARTICULAR PROBLEM. IF YOU HAVE DIFFICULTY EXPLAINING YOUR PROCEDURE, YOU DON'T UNDERSTAND IT AS WELL AS YOU THOUGHT YOU DID!
- 5) Save all exam papers until course is over in case any questions arise concerning grades.

## LECTURES:

The lectures are designed to amplify and supplement the contents of your textbook. I will minimize re-stating what you can read in any assigned or suggested reference book. Taken together, text and lecture notes, you have the collected information and ideas that you are responsible for. Copies of old exams are on file in the Chemistry Library. There are approximately 27 exams from both terms of General Chemistry. Of these exams, about 2/3 are the answer keys, and the other 1/3 the exams without the answers. The latter would be useful to practice on. While the format of the new exams is different, the types of questions are similar.

The LECTURES are given monday through thursday from 10:30 AM to 12:25 PM (except where make-up days are required). Lectures are preceded by a recitation (given by the Recitator) from 9:00 AM to 10:00 AM. All homework assignments (see section on Homework/assignments) will be handed in to the Recitator, TBA. Lectures will also be given on friday May 31, and on friday June 14, to make up for Memorial Day and July 4<sup>th</sup> holidays.

## EXAMS:

### S14O3: May 28-July 5

There will be two full period midterm examinations, and a cumulative final exam. All midterm exams will be given in the lecture hall, 309 H, on thursdays from 10:30 AM to 12:30 PM. The final (in 309 H) goes from 9 AM to noon.

First Exam: June 6 (THURSDAY)  
Second Exam: June 20 (THURSDAY)  
Final Exam: July 3 (WEDNESDAY)

### S14O4: July 8-Aug. 16

As with the first term, there will be two midterm examinations and a cumulative final examination. The midterm exams will be given in the lecture hall, 309 H, from 10:30 AM to 12:30 PM. The final exam will be given on THURSDAY August 15<sup>th</sup> from 9 AM till noon in 309 H.

First Exam: July 18 (THURSDAY)  
Second Exam: August 1 (THURSDAY)  
Final Exam: Aug 15 (THURSDAY)

## Grades:

Of the two midterm exams, the each grade counts 25 % . The final counts 50% towards your final letter grade.

### THERE ARE NO MAKE-UPS FOR MID-TERM CLASS EXAMS

## Regrade Policy:

Exams are group-graded and returned as soon as possible, though not necessarily in the class period following the exam. Exams are returned to you in lecture. An answer key will be posted on a bulletin board across the hall and to the left of 309 H . As occasionally happens, mistakes are made in grading; regrading of the period exams will be allowed according to the following guidelines:

1. Clerical, addition, or numerical errors will be rechecked on your personal request.
2. Requests for regrading for any other reason may result in regrading the entire examination so please be careful and thoughtful, and do not request a regrade for trivial reasons.
3. If you do decide to hand in your paper for a regrade, be sure no alterations in the original answers or grading remarks have been made so we can properly determine what was originally written and how it was graded. On rare occasions, students have tried to bend the regrade privilege by altering history in their favor. To discourage that practice and maintain the regrade privilege for the benefit of the vast majority of the class, a random sample of the exams are xerox-copied before they are returned.
4. All regrade requests pass directly to the appropriate box labeled "REGRADES" located outside Socky Lugo's office, 318 Havemeyer, and then back to the original graders for review at their next regular grading session.

5. These is a statute of limitations: The first exam regrade requests will be honored up to the morning of the second exam, after which the first exam will no longer be subject for discussion for any reason. For the second exam, it is the morning of the final exam.
6. If you wish to submit an exam for a regrade, you must make a duplicate copy prior to handing it in. The merits of regrade requests are judged when the graders reconvene to grade each subsequent exam.

**DO NOT FORGET TO MAKE A XEROX COPY OF YOUR EXAM AND  
SUBMIT THE ORIGINAL WITH THE REGRADE FORM.**

#### Homework / Assignments:

Homework problems are suggested along with the textbook section assignments given in class. Homework should be done in duplicate AND ONE COPY GIVEN TO THE TA. If you have faithfully handed in your homework, it may help you obtain a higher grade if you are JUST below the cutoff point for that grade.

#### Office Hours:

My Havemeyer mail box (mail code, #3122), is located outside the Chemistry Departmental Office, Room 344 on the main floor. My telephone number is 854-8893 (on campus call 48893) and my office is 863 Chandler. I will usually be in my office from 9 AM till 10:20 AM on monday thru thursday to answer your questions.

If you have difficulty contacting me, a message can be left with either Daisy or Socky in the Undergraduate Office, 318 H. Their phone number is 854-2163 (on campus call 42163).

The TA will post his/her office hours when the term begins.

## General Information, Syllabus, & Problems

### Suggested Alternative / Additional Texts

You may wish to consult alternate text sources to provide expanded discussions, a different point of view or another way of expressing the same ideas. Here are a few suggestions drawn from texts previously used in this course. All are on reserve in the library, along with many others not mentioned.

- Fine and Beall, CHEMISTRY FOR ENGINEERS AND SCIENTISTS
- Mahan, COLLEGE/UNIVERSITY CHEMISTRY, Addison-Wesley
- Dickerson, Gray & Hight, CHEMICAL PRINCIPLES, 3rd edition, Benjamin, (1979).
- Brown & LeMay, CHEMISTRY. THE CENTRAL SCIENCE, Prentice-Hall, 2nd edition (1980)
- Segal, General Chemistry

All are very good. My choice is the Dickerson text for its intermediate use of mathematics and general level of rigor. The more taxing text (Mahan) may provide your best test of developing skills and knowledge, and the Brown text, your best support if you are having problems (along with the paperbacks below). But any alternative text you might choose should be the one you are comfortable with and that can do you some good.

### PAPERBACKS

- Butler & Brosser, RELEVANT PROBLEMS
- Willis, CHEMICAL PROBLEMS
- Sienko, CHEMISTRY PROBLEMS
- Rosenberg, SHAUM'S OUTLINE OF COLLEGE CHEMISTRY

# Chemistry S14O3D

## Chapter /Topic

1	Atomic Nature of Matter	
2	Chemical Equations and Reaction Yields	
3	Chemical Periodicity	
4	Types of Chemical Reactions	
5	Gaseous State	
<hr/>		<u>EXAM 1</u>
6	Condensed Phases and Phase Transitions	
7	Chemical Equilibria	
10	Thermochemistry	
<hr/>		<u>EXAM 2</u>
11	Spontaneous change and equilibrium	
12	Redox reactions and Electrochemistry	
13	Electrochemistry and Cell Voltage	
<hr/>		<u>FINAL EXAM</u>
FINAL EXAM IS ALL INCLUSIVE		

## S14O3D Homework

### Chapter/Problems

- 1 13,15,17,20,22,23,24,27,29,41,42,50,51,54,57,58,70,71,74
- 2 4,8,9,13,14,20,22,26,27,32,39,40,42,43,45,46,47,48,51,56,  
58,62, 64,65,67,70, 72,74,75,77,79,98,99
- 3 11,13,17,18,23,24,25,26,31,33,37,39,40,45,52,54,55,60,62,  
66,67, 68,69,72,75,76,77,78,100
- 4 7,12,14,18,21,25,26,29,30,33,35,40,45,47,50,53,57,68,70,  
71,75,76,83,84,86,95,108
- 5 11,15,17,21,22,30,35,36,38,46,47,50,51,55,56,57,62,66,68,  
87,88,91
- 6 13, 15, 17, 19, 27 31, 35, 39, 41, 47, 49, 53, 59, 70, 72, 85
- 7 1,5,7,9,11,13,17,19,23,25,27,31,37,41,45,47,53,57,63,67,  
72,74,77
- 10 7, 13,15,19,21,29,31,33,39,45,47,51,53,57,59,61,65,70,75
- 11 7,9,11,13,19,25,27,31,35,37,43,45,49,53,57,61,63,74,77,  
84,89
- 12 3,7,11,13,15,25,27,29,39,41,43,45,47
- 13 3,5,11,13,23,29,33,37,39,41,47,49,69,70

## Chemistry S14O4Q

### Chapter /Topic

8	Acid-base Equilibria	
9	Dissolution and precipitation	
16	Quantum Mechanics and the Hydrogen Atom	
<hr/>		<u>EXAM 1</u>
17	Many-Electron Atoms and Chemical Bonding	
18	Molecular Orbitals and Spectroscopy	
20	Structure in solids	
<hr/>		<u>EXAM 2</u>
19	Coordination complexes	
14	Chemical Kinetics	
24	From Petroleum to Pharmaceuticals (Organic Chemistry)	
<hr/>		<u>FINAL EXAM</u>
FINAL EXAM IS ALL INCLUSIVE		



## S14O4Q Homework

### Chapter/Problems

- 8 1,3,5,7,9,15,27,29,37,45,47,53,55,59,63,65,67,71,76,83,95
- 9 1,9,11,15,17,21,23,27,31,35,41,43,47,49,51,53,57,63,68,73
- 16 9,10,11,15,16,19,20,22,25,31,33,34,36,37,38,45,47,48,50,54,  
56,61,62
- 17 6,9,10,11,13,18,23,24,27,28,30,31,33,34,35,39,44,45,47,  
49,54,60
- 18 7,8,13,15,16,21,23,24,31,33,34,39,40,43,44,45,53,57,65
- 20 9,11,13,15,17,19,20,21,25,27,29,31,39 and 52
- 19 1,2,5,9,11,16,17,23,25,27,31,35,37,39 and 46
- 14 7,9,15,17,21,23,25,27,29,31,35,37,39,41,43,45,49,51,55,60  
72
- 24 7,8,9,10,11,12,13,14,25,26,34,37