

PROFESSOR JACK I. MORROW
General Information, Syllabus, & Problems
Chem F 14O3 - F 14O4 2000/2001 academic year

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.

The LECTURES are every Monday and Wednesday from 6:05 PM to 7:25 PM. RECITATIONS (given by the TA) will be held twice weekly. If possible, one recitation will precede the lecture and the other recitation will follow the lecture. The recitation hours will be set during the first week of the course. All homework assignments (see section on Homework/assignments) will be handed in to the TA.

EXAMS:

F14O3: Sept. 6-Dec. 18

There will be three full period midterm examinations, and a cumulative final exam. All exams will be given in the lecture hall, 309 H.

First Exam: October 4 (Wednesday) from 6 PM to 7:30 PM
Second Exam: November 8 (Wednesday) from 6 PM to 7:30 PM
Third Exam: December 6 (Wednesday) from 6 PM to 7:30 PM
Final Exam: December 18 (Monday) from 7 PM to 10 PM

F14O4: Jan. 17-May 7

As with the first term, there will be three midterm examinations and a cumulative final examination.

First Exam: February 14 (Wednesday) from 6 PM to 7:30 PM
Second Exam: March 21 (Wednesday) from 6 PM to 7:30 PM
Third Exam: April 18 (Wednesday) from 6 PM to 7:30 PM
Final Exam: May 7 (Monday) from 7 PM to 10 PM

Grades:

Each of the three (3) midterm exams counts 20% and the final exam (which is cumulative) counts 40% towards your final 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. The answer key is posted on the bulletin board across the hall to the right side of 318 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 second exam, etc.

6. If you wish to submit an exam for a regrade, you should 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 code, #3122, is located outside the Chemistry Departmental Office, Room 344 on the main floor. My phone is 854-8893 (if on campus call 4-8893) and my office is 863 Chandler. I will usually be in my office from 3 till 6 PM on Mondays and Wednesdays 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 4-2163).

Holidays:

Classes will not meet on Monday, November 6th (election day holiday) and during the Spring recess (March 12 - March 16).

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 either the Fine and Beall text or the Dickerson text for their 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.

PAPERBACKS

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

Chemistry F 14O3

Chapter /Topic

- 1 Atomic Nature of Matter
- 2 Chemical Equations and Reaction Yields
- 3 Chemical Periodicity
- 4 Types of Chemical Reactions
- 5 Gaseous State
- 6 Condensed Phases and Phase Transitions
- 7 Chemical Equilibria
- 10 Thermochemistry
- 11 Spontaneous change and equilibrium
- 12 Redox reactions and Electrochemistry
- 13 Electrochemistry and Cell Voltage (If time does not permit, the second term, Chem 1404, will start with chapter 13.)

F 14O3 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 F 14O4

Chapter /Topic

8	Acid-base Equilibria	
9	Dissolution and precipitation	
		Exam 1
16	Quantum Mechanics and the Hydrogen Atom	
		OR Exam 1
17	Many-Electron Atoms and Chemical Bonding	
18	Molecular Orbitals and Spectroscopy	
		EXAM 2
20	Structure in solids	
		OR Exam 2
19	Coordination complexes	
14	Chemical Kinetics	
		EXAM 3
24	From Petroleum to Pharmaceuticals (Organic Chemistry)	

F 14O4 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
- 14 7,9,15,17,21,23,25,27,29,31,35,37,39,41,43,45,49,51,55,60
72
- 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
- 24 7,8,9,10,11,12,13,14,25,26,34,37