

Chem 6, 9 Section, Spring 2002

General Information

**Please read all of the following and ask if something's not clear!
In particular, read the section on the Honor Principle closely!**

Web Site

The URL <http://www.dartmouth.edu/~genchem> will take you to the home page for both sections of Chem 6. Click on the 9 AM section link to go to our section's home page, but before you do, note that links to the course lab site (which you should be familiar with from Chem 3 or 5) are also on each page in the site. Bookmark at least our section's home page; you'll go there often. A web version of this handout is on this site. It includes links to other information of interest right off the bat.

People, Places, Things

INSTRUCTOR: John Winn, 204 Burke.

OFFICE HOURS: Tuesday, 1:30-2:30; Friday, 12:30-2:00; or by appointment. Please ask if you need help, and see below about BlitzMail policy.

REQUIRED TEXTS: Principles of Modern Chemistry, 4th Edition, by Oxtoby, Gillis, and Nachtrieb, plus Study Guide and Student Solutions Manual, by Freeman.

ADDITIONAL READING: A selection of general chemistry texts is available in Kresge Library. You may find it helpful to read appropriate sections in one or more of these on occasion, and all of them are good sources of extra problems to do and solved exercises to study. Modern University Chemistry, by Porile, has been used in this class in the past and should be the most useful.

CLASS TIMES: M, W, and F, 8:45 - 9:50; X-hour, Th 9:00 - 9:50, 006 Steele Hall. X-hours will be used for problem discussion sessions as well as additional lectures as warranted. See the Course Syllabus at the end of this handout for more details about class meeting times throughout the term.

LABORATORY: The Laboratory Important Information sheet provides details about the lab. Please read it carefully. **Failure to complete the laboratory portion of the course can result in failing the entire course no matter what your exam performance has been.** You must purchase a copy of the lab manual before your first lab. Notebooks will be provided. Labs start Monday, April 1. Visit the lab's web site for details.

BLITZMAIL POLICY: We all love BlitzMail. But it is not the medium to answer specific technical questions, such as "How do you work the third homework problem?" On the other hand it is an ideal way for us to keep in touch outside class time. I may blitz info to all of you from time to time, and you should feel free to blitz us whenever you'd like to set a time to meet in person, whenever you will miss an important class event, etc. You can use the Blitz short-cut "jwinn" (or "jwinn@dartmouth.edu" if you're off the BlitzMail system) to reach me.

Grades

EXAMS: There will be four exams during the term, including the final exam that will be at a time and place announced by the Registrar. The exams will be held in 006 and 007 Steele.

Exam 1: (100 points) THURSDAY, April 18, 7:00 - 10 PM

Exam 2: (100 points) THURSDAY, May 9, 7:00 - 10 PM

Exam 3: (100 points) As scheduled by the Registrar.

HOMEWORK: Problem-solving is important! Typical practice problems will be assigned each week, and some others will be done during the lectures. If you fail to work at these on your own, you will find the exams very difficult! Homework will not be turned in or graded, but you will find it very good preparation for the exams. The Solutions Manual provides detailed answers for the odd-numbered problems—additional solutions to the ‘Lecture Problems’ will be posted on the course web site. *Please note that carefully reading the solutions, although useful, is no substitute for doing the homework yourself.* It is vital that you attempt all the assigned problems. You cannot wait until the last minute to try to master this material. If you find you are having difficulty with the problems, see your instructor as soon as possible so that we can work together on them.

GRADES: The course grade will reflect your exam performance (300 points total) and your lab performance (60 points total, or about 17% of the course). The historic GPA for this course is 2.9 to 3.1 with a median course grade of B; this year should be no different.

OTHER SOURCES OF HELP: The following resources, not associated with the Chemistry Department, are available for help: Academic Skills Center Study Groups: sign up 2nd week of classes, Collis, and the Tutor Clearing House of the Academic Skills Center, Collis.

Ethics

DISABILITIES: Any student with a physical or learning disability or a chronic health problem for whom special accommodations would be helpful is encouraged to discuss with me the types of assistance I might be able to offer.

HONOR PRINCIPLE: It is vital that you understand the role of the Dartmouth Academic Honor Principle in all aspects of this course. Please inquire if you have questions or feel you need clarification on any of the following explicit dictums of the Honor Principle for this course. In particular, you should be aware that the Honor Principle is a two-way agreement: you agree, by enrolling in Dartmouth, to uphold it, and I agree, by accepting employment on the Dartmouth Faculty, to enforce it. The course web site has a link to the Honor Principle that states our duties as faculty members. Read them. I will follow them if need be. Bottom line: a failing grade is always preferable to a trip before the Committee on Standards. *Don't screw up.*

For this course, there are specific aspects of the Honor Principle you must keep in mind, reproduced below from the course web site:

Below are some specific ways that the Honor Principle applies to Chem 5 and Chem 6. Although some Honor Principle violations are given, this is not an exclusive list, nor is it

meant to replace your judgement and integrity. Please feel free to inquire further if the statements below are not adequate.

Quizzes and Exams. Any of the numerous activities normally considered cheating are violations of the Dartmouth Honor Principle. Examinations and quizzes are not proctored; however, the professor will be present to answer questions that arise. Since exam graders sometimes make mistakes, claims of error in grading will be considered carefully. Changing a graded answer and returning the paper for regrading is a direct and flagrant violation of the Honor Principle.

Laboratory. Honesty and integrity lie at the very heart of any experimental science, and the following remarks indicate how the Honor Principle applies to the laboratory work in Chem 5 and 6: Unless permission is granted by the instructor, use of another student's laboratory data is a violation. When use of another's data is allowed, the source of the data must be indicated. Fabrication of data or alteration of your own data to secure some desired result is also a violation. In the case of experiments where two students work together and data have been recorded in one student's notebook, a copy of the data may be made in the other student's notebook with an appropriate citation to the location of the original data. Other material in the notebook that has been copied from any source whatever must be provided with a source citation. Laboratory reports must represent your independent calculations and individual conclusions, although comparison of numerical results with those of another student is permitted. Direct copying of any portion of another student's lab report is a violation of the Honor Principle.

Problems. Working problems is excluded from Honor Principle constraints. It is helpful for many students to work problems collaboratively. Whether working independently or with a partner or group, you are encouraged to tackle each problem independently until the point is reached where further time and effort seem futile. At that point, examination of the answer key or study guide is encouraged. You should also work problems independently, so you do not rely too heavily on a group or partner. Remember that exams will include problems and are taken independently.

Course Material. Denying other students access to course material is a violation of the Honor Principle. This includes removing or altering course material on reserve in Kresge Library.

Special Note to Students Repeating or Re-enrolling in Chemistry 5 or 6:

The Department of Chemistry views each enrollment in Chemistry 5 and 6 as an enrollment in a new course. As such, it is a violation of the Honor Principle to submit any graded material that was previously submitted in an earlier enrollment in Chemistry 5 or 6.

Violations of the Academic Honor Principle are taken very seriously. There have been cases involving students in Chem 5 and 6 that have resulted in severe penalty, including suspension. Note that the Honor Principle not only prohibits the kinds of activities described above, but also requires you to take some action should you suspect that someone else in the class is violating the Honor Principle. See the Student Handbook or the Academic Honor Principle website for further information.

Course Syllabus

Chemistry 6 builds on Chemistry 3 and 5, especially during the first two weeks or so as we study chemical reaction rates. The remainder of the course centers on atomic and molecular structure—why the Periodic Table looks the way it does and how atoms work to make chemical bonds in molecules and solids. The table below gives a preliminary outline of the topics and reading for this term. We may not follow it exactly, but we will never be far from this schedule! Note that Monday, May 27, is Memorial Day holiday (and the first day of Reading Period, even though there are classes later in the week); x-hours (shown below in bold) will be used as well! Note that I will be out of town Thursday and Friday, May 16 and 17. No class either day.

Week	Dates	Subject	Reading
1	March 27, 29	Chemical Reaction Kinetics	Chapter 13
2	April 1, 3, 4 , 5	Chemical Reaction Kinetics	Chapter 13
3	April 8, 10, 12	Nuclear Decay Kinetics Atomic Structure	Sections 14.3, 1.4, 1.5 Chapter 15
4	April 15, 17, 18 , 19	Atomic Structure Many-Electron Atoms	Chapter 15
5	April 22, 24, 26	Periodic Table, Periodic Properties	Chapter 15
6	April 29, May 1, 2 , 3	Bonding + Structure	Sections 3.3—3.6
7	May 6, 8, 9 , 10	Bonding + Structure	Sections 16.1, 16.2
8	May 13, 15	Bonding + Structure	Sections 17.1, 5.2, 5.3
9-10	May 20, 22, 23 , 24, 29	Ionic Bonding, Solids, Intermolecular Interactions	Pages 63-64, 705-715