

General Chemistry I

CHEM 101 Winter Term, 2007

Objectives for CHEM 101-102

- to understand the concept of the atomic and molecular nature of matter and of the chemical reactions which transform matter from one substance to another;
- to learn the basis of the physical properties and structure of solids, liquids, and gases and to understand the factors affecting their chemical reactivity;
- to develop problem-solving skills in the quantitative areas of chemistry such as stoichiometry or mass balance, thermochemistry, properties of gases, chemical equilibria, and the rates of chemical reactions;
- to be introduced to elementary experimental chemistry;

Lecture Time, Place:

- Tu,Th,2:00-2:50, Disque 103

Instructor Contact Information:

- Dr. Daniel A. Kleier, Chemistry Department: Stratton 414;
- Office Hours: Wed, noon-3:00 PM, email: dak48@drexel.edu

OWL Coordinator:

Dr. Paul Deroo: email: pwd26@drexel.edu

Course Web-site: WebCT, CHEM 101

You will always find here the most current syllabus (supersedes this version), course schedule and announcements about changes in the course, labs and exams.

Check it regularly.

1. Required Textbooks and Manuals:

J.W. Moore, C.L. Stanitski, and P.C. Jurs, Chemistry - The Molecular Science, 2nd Ed., Thomson/Brooks/Cole, 2005.

The Online Web-based Learning (OWL) package is bundled with this textbook at the Drexel Bookstore. It is used for additional homework and credit.

Additional software: Chemistry Now is available online using the ID/Password bundled with the textbook. This is not a required element of the course.

2. Required Laboratory Manual:

E. Thorne, Laboratory Manual for General Chemistry, Drexel University, 2006-2007 Academic Year.

3. Required Supplementary Materials

Each student must purchase an OWL account either as part of their textbook bundle or separately from the bookstore (a limited number, for those who may already possess the textbook). OWL accounts can not be shared.

Safety glasses or goggles must be worn in the laboratory (available at the bookstore).

Periodic tables and other useful information will be provided as part of your test package at the time of the test.

4. Table 1. Grading structure:

Activity	% Grade	Additional Information
OWL	10	
Exams	35	Three 50-minute exams will be given starting at 8:00 AM on dates indicated on the course schedule. Recitation grade may replace lowest exam grade. A missed exam can be replaced by make-up exam or recitation grade.
Recitation		A recitation grade will be determined based on both attendance and recitation participation.
Final Exam	35	You must score at least 45% on the final in order to pass the course.
Labs	20	
Total	100	

Grading policy: students who meet all the requirements will earn an A- if they score at least 90% overall, B- \geq 80%, C- \geq 70%, D \geq 60%. If a question arises about an exam grade, for instance, feel free to contact us with your concerns. Any questions about final course grades should be raised as soon as possible; don't wait until the Spring Quarter has started. Be aware that the course instructor may contact you via email if there are problems with your final grade or course components.

5. Academic Honesty / Cheating: Students are held to the highest expectations and standards regarding honesty in all aspects of the course, including taking exams and in the preparation of laboratory reports. Cheating, **including misrepresentation of the work of others as your own**, will not be tolerated. Cases of cheating will be reported to the University and the College of Arts and Sciences. Students caught cheating will receive a failing (F) grade.

6. Lectures: Lectures will be given on topics as indicated by the course schedule. Lecturers may call upon students to provide feedback from time to time, but attendance is not mandatory, except during census week (normally the second week of term). If catch-up is not required, a review will be provided at the discretion of the lecturer. Otherwise, this time may be used to discuss new material. **Not all required material will be covered in lecture.** The course schedule is provided as a guide and will be revised if dictated by prevailing circumstances (e.g. weather, pedagogical purposes. ...)

7. Examinations:

Three, fifty-minute exams will be given as indicated on the course schedule. Dates, times and locations of these exams will be posted on the course website. The best three scores out of four (three exams and Recitation grade) will be used for the final grade calculation, so that the zero score for a missed exam will be replaced by your recitation grade. After the commencement of the exam, no student will be allowed to leave the testing room without handing in the exam. Once a student leaves the testing room, he/she will not be allowed to re-enter it for any reason. Students arriving late to the exam, after any other student has left, will not be permitted to take the exam. The exams will consist of multiple-choice questions. Marks are not deducted for incorrect answers. All students are responsible for bringing to the exam their own operational writing instruments and calculators - no sharing will be allowed. A periodic table, constant values, etc. will be provided as needed. No other materials will be allowed. It generally takes 2-5 school days for grades to be reported back to students. Be aware, that active cell phones and the use of random-access devices (e.g., MP3 players, Palm Pilots, iPods) are NOT ALLOWED in exam rooms, and such may be confiscated if they are found.

THERE WILL BE AN OPPORTUNITY TO MAKE UP ONE MISSED EXAM. During the last week of classes, a make-up exam will be given. The exam will cover material not included on a previous exam. To be eligible to take the make-up exam, a student must submit an application (available on the course website) by 3/9/07 that includes a reasonable explanation for missing the initial exam. Eligible students will be notified by email regarding the date, time and location of the exam. The make-up exam can only be used to replace a missed exam; it cannot be used to improve a

grade on an exam that was taken. There will be no opportunity to retake the make-up exam, regardless of the reason for missing it.

Athletes who miss two or more exams because of conflicting events should contact Dr. Kleier

8. Final Exam: The final exam will be held during final exam week. The date, locations and start time will be announced in class and posted on the course website. **NO MAKE UP WILL BE GIVEN FOR THE FINAL EXAM. STUDENTS MUST BE PRESENT FOR THE FINAL.** After the commencement of the exam, no student will be allowed to leave the examination room without handing in the exam. Once a student leaves the examination room, he/she will not be allowed to re-enter it for any reason. Students arriving late to the exam, after any other student has left, will not be permitted to take the exam. The exam will consist of multiple-choice questions. There is no penalty for guessing. All students are responsible for bringing to the exam their own operational writing instruments and calculators - no sharing will be allowed. Be aware, that active cell phones and the use of random-access devices (e.g., MP3 players, Palm Pilots, iPods) are **NOT ALLOWED** in exam rooms, and such may be confiscated if they are found. **The final exam will cover material from the entire term. A student who does not score at least 45% on the final exam will not pass the course, regardless of their prior performance in the course.**

9. Recitations: The recitation grade will be based on the Recitation Classes. There is a 50-minute recitation every week, designed to give you experience in explaining and working problems. Recitation instructors are prepared to answer any question in this chemistry course, but priority will be given to those on the current subject matter. The problem assignments are listed on the Course Schedule.

10. Laboratories: The purpose of the laboratory is to augment the course material. Subject matter not covered in the lecture part of the course will be covered in the lab. The major objective of the lab part of the course is for you to obtain training in the chemical laboratory and in experimental technique and recording and reporting of experimental results. You will have a chemistry lab every other week beginning in week 2 for even-numbered lab sections or week 3 for odd-numbered lab sections (please refer to the table below). All laboratory instruction is given in Disqué Hall. With the exception of the first experiment, you are required to submit the introduction to your lab report at the beginning of the lab period. If you do not turn in the introduction in lab, you will lose 50% of the points designated for that section. Exams may include questions on lab material.

Table 2. Laboratory Schedule

	Lab 1	Lab 2	Lab 3	Lab 4
Title	Exp. #1 Gravimetric Determination of Phosphorus in Plant Food	Exp. #2 Spectroscopy	Exp. #3. Conductivity of Solutions	Exp. # 4 Determination of Molar Mass by Freezing Point Depression
Even Lab Sect.	Week of January 15 th	Week of January 29 th	Week of February 12 th	Week of February 26 th
Odd Lab Sect.	Week of January 22 nd	Week of February 5 th	Week of February 19 th	Week of March 5 th

If you miss a lab, try to make up the lab in one of the other sections. If that is not possible, a make-up day will be scheduled during the last week of classes. A maximum of two labs can be made up during this time. In order to obtain a passing grade for CHEM 101, you must obtain a cumulative lab grade of 55% or higher.

11. Submitting Lab Reports: The data sheet from the labs must be signed by your instructor prior to your leaving the lab. The data sheets may be photocopied and shared (with your lab partner only). Every student is required to hand in an individual lab report. Your lab report is due at 5:00PM on the day one week after you do the lab. You should submit your lab report **in person** to your lab instructor. If your lab instructor is absent at that time, then you may place it in the CHEM 101/102 drop box across from room-304 in Disqué Hall. Ensure that the cover page of your report displays your lab instructor's name as well as the other essential information (your name, course number, section number, expt. title). Five points will be deducted for each day (not including weekends) the report is late. Any report submitted more than two weeks late is worth zero (0) points.

12. Safety in the lab: Safety in the lab: Everyone is required to wear safety glasses or goggles while in the lab. Prescription glasses must be covered with safety goggles unless written documentation is provided to the instructor that indicates that their lenses meet or exceed the ANSI Z87 1-1989 standard and are equipped with side shields. All students must sign a form stating that you understand and will abide by this policy prior to being allowed to work in the lab. It is recommended that a pair of safety glasses is purchased from the Drexel Bookstore prior to coming to the lab.

GENERAL INFORMATION

Disability Services: Students with disabilities who wish to request accommodations and services at Drexel University need to present a current accommodation verification letter ("AVL") to the instructor before accommodations can be made. AVL's are issued by the Office of Disability Services ("ODS"); <http://www.drexel.edu/oed/disability/Students/index.html>.

How Will You Learn Chemistry in This Course?

It has been our experience in the past that to do well in this course, you must spend at least two hours on Chemistry for every hour you spend in class (three hours is recommended). That means spending 6 to 9 hours per week on Chemistry, outside the classroom. Focus on successfully completing the OWL homework assignments, but don't ignore the problems at the end of the chapter. The assignments provided should prepare the "average" student to get the average grade. Higher grades require more practice. The more you practice chemistry, for example by solving problems, the more quickly you will be able to get through the easy problems on an exam. One common difference between the "A" student and the average student is the "A" student gets through the easier problems quickly, and has more time to spend on the challenging problems.

In the course Schedule, sections of the text are listed. You are responsible for all material in these sections whether covered in lecture or not.

Do not hesitate to speak with your recitation instructor or lecturer when you are having difficulty with concepts or problems covered in the course.

Course Schedule

Week	Component	Monday	Tuesday	Wednesday	Thursday	Friday
1	Date	1/8/2007	1/9/2007	1/10/2007	1/11/2007	1/12/2007
	Lecture topic	Review Ch. 1-5		Review Ch. 1-5		
	Recitation	Ch 1: 11,29; Ch 2: 61,65,87; Ch 3: 30,100				
	Lab	no lab this week				
2	Date	1/15/2007	1/16/2007	1/17/2007	1/18/2007	1/19/2007
	Lecture topic	Review Ch. 1-5		Review Ch. 1-5		
	Recitation	No class	Ch 4: 17,100,102 ;Ch 5: 38,41			
	Lab	Exp. 1, even-numbered sections				
3	Date	1/22/2007	1/23/2007	1/24/2007	1/25/2007	1/26/2007
	Lecture topic	Review		Exam 1	7:1-4 (atomic model)	
	Recitation	Ch 5: 82,113; Ch 7: 10,15,25				
	Lab	Exp. 1, odd-numbered sections				
4	Date	1/29/2007	1/30/2007	1/31/2007	2/1/2007	2/2/2007
	Lecture topic	7:5-7		7:10-12 (periodicity)		
	Recitation	Ch 7: 31,38,70,83,139				
	Lab	Exp. 2, even-numbered sections				
5	Date	2/5//2007	2/6/2007	2/7/2007	2/8/2007	2/9/2007
	Lecture topic	6:1-3 (thermochem.)		6:4-7 (thermochem.)		
	Recitation	Ch 7: 97,127; Ch 6: 31,51,67,75				
	Lab	Exp. 2, odd-numbered sections				
6	Date	2/12/2007	2/13/2007	2/14/2007	2/15/2007	2/16/2007
	Lecture topic	EXAM 2	6:8-10 (thermochem.)		6:11-12; 8:1-3 (bonding)	
	Recitation	Ch 6: 82,88,115; Ch 8: 9,13				
	Lab	Exp. 3, even-numbered sections				
7	Date	2/19/2007	2/20/2007	2/21/2007	2/22/2007	2/23/2007
	Lecture topic	8:4-6 (bonding)		8:7-10 (bonding)		
	Recitation	Ch 8: 17,48,54,82,89				
	Lab	Exp. 3, odd-numbered sections				
8	Date	2/26/2007	2/27/2007	2/28/2007	3/1/2007	3/2/2007
	Lecture topic	9:1-2		9:5-7 (molecular struct.)		
	Recitation	Ch 8: 68,91 Ch 9: 13,14,24				
	Lab	Exp. 4, even-numbered sections				
9	Date	3/5/2007	3/6/2007	3/7/2007	3/8/2007	3/9/2007
	Lecture topic	EXAM 3	10:1-4 (gases)		10:5-8 (gases)	
	Recitation	Ch 9: 47,58; Ch 10: 2,17,37,62				
	Lab	Exp. 4, odd-numbered sections				
10	Date	3/12/2007	3/13/2007	3/14/2007	3/15/2007	3/16/2007
	Lecture topic	10:9-12 (gases)			Review	
	Recitation	Ch 10: 52,92,112				
	Lab	MAKE UP LAB				
11	Date	13/19/2007	3/20/2007	3/21/2007	3/22/2007	13/24/2007
		FINAL EXAM WEEK				

