

# CHEMISTRY 109

## Lecture 2, Fall 2002

**Read This Syllabus Today**  
**Keep It for Future Reference**

General Chemistry 109:	5 credit hours
Lectures:	2:25 PM MWF 1351 Chemistry
Lecturer:	Professor Judith N. Burstyn 5211 Chemistry (262-0328) <a href="mailto:chem109-3@chem.wisc.edu">chem109-3@chem.wisc.edu</a>
Office Hours:	W 1:15–2:00 PM, or email for appointment.
Quizzes (via WebCT)	Thursdays or Fridays, DoIT Infolab, Dayton Street (see Course Assignment Schedule for deadlines)

**Chemistry 109 is a one-semester first-year course in college chemistry.**  
**Students in Chemistry 109 are presumed to have taken at least one year of high school chemistry.**

### **Required Material**

Unless you already have it, you will need to purchase each item listed below. Some of these items are different from required material in lecture three of Chemistry 109. These are the only required items for this lecture.

**Textbook:** *Chemistry: The Molecular Science*, by Moore, Stanitski, and Jurs; available from local bookstores.

**Lab Book:** *Chemistry 109 Laboratory Manual, Fall 2002*, Chemistry Department, University of Wisconsin-Madison; available from Alpha Chi Sigma (chemistry fraternity/sorority) in the chemistry building. Included in the lab manual is the CD-ROM: *General Chemistry 109*, by the editors of the Journal of Chemical Education Software, Madison, WI, 2002. The CD contains software you will use in Chemistry 109.

**Lab Notebook:** Carbonless laboratory notebook with duplicate pages available from Alpha Chi Sigma or local bookstores (where it is more expensive).

**Safety Goggles:** Industrial quality eye protection is required at all times when you are in the lab. Safety goggles that completely seal around the eyes and fit over regular glasses can be purchased from local bookstores.

**Calculator:** An inexpensive calculator is required. It should have capabilities for square roots, logarithms and exponentiation (antilogarithms), and exponential (scientific) notation operations. The calculator will be used on homework assignments, quizzes, exams, and in the lab.

### **WebCT Web Site**

Much of the material for this course is available via WebCT. You will automatically have WebCT access if you are enrolled in this course, but you need to log in to WebCT as soon as possible and make certain that it recognizes you. Except for quizzes (see below) you can use WebCT on your own computer, a friend's computer, or a computer in one of the computer labs on campus. Direct your Web browser to <http://webct.wisc.edu/>, read the directions, and click on "Log in to myWebCT". You will be asked for a Username and a Password. Your Username is the same as your NetID or WiscWorld username. Your password is your NetID password (or WiscWorld password), which you

selected when you registered. You use this same Username and Password for UW-Madison services such as My UW-Madison and WiscMail. (If you do not know your NetID Username or Password, you may need to activate your NetID, which you can do at <http://my.wisc.edu>. If you would like to change your NetID password, use your current password to log in to the My UW Madison portal at <http://my.wisc.edu> and then select "My NetID".)

You should log in to Chemistry 109, Lecture 2 in WebCT as soon as possible and work on the **Practice Quiz**, which is designed to check out your computer to make sure it will do everything you will need during the semester. Do the Practice Quiz on the computer you are most likely to use for homeworks and tutorials this semester. The Practice Quiz is due at midnight, Monday, September 16, but don't wait until the last minute to do it. Also work on **Homework 1** and **Review Homework 1**; both homeworks are due at 8:30 AM Wednesday, September 11.

You will take a **WebCT quiz** on Thursday or Friday the week of September 9 and nearly every week during the semester. To take a quiz you must go to the Computer Testing Lab, located in room B122 of the Computer Science and Statistics building (1210 W. Dayton Street). Before taking a quiz you will be asked to show your photo ID, so be sure you have it. Depending on which discussion/lab section you are in, your quiz deadline is either on Thursday or on Friday each week. Use the table on the last page of the course schedule to find the quiz deadline time for your section. You must arrive at the testing room to start your quiz before this time. You can take a quiz at any time the room is open, as long as it is before your deadline. The Computer Testing Lab is open from 11:00 AM to 6:00 PM on Thursday and from 8:00 AM to 5:00 PM on Friday. If for any reason there is a problem with your taking a quiz at or before the deadline, consult with your TA to find an alternative time.

### **Gen Chem Web Site**

Course information is also available on the Gen Chem Web Site for Chemistry 109, Lecture 2. Go to the URL <http://genchem.chem.wisc.edu/>, click on Current Lectures, and then click on Chem 109 Lecture 2. Often the same information is available on both the Gen Chem site and in the WebCT course. If one Web site is not available you should try the other. However, you need to be familiar with both, because some information is available on only one of these sites.

### **Course Organization**

This course has been designed and organized to help you learn chemistry, but no course or instructor can learn for you. **Learning is something only you can do. For that reason you are the most important feature of the course.** You will need to devote considerable out-of-class time to studying the subject. A good rule of thumb is that you should be spending approximately three hours outside of class for each hour you are in class.

Throughout this course emphasis will be placed on understanding chemistry and learning to think effectively in solving scientific problems. However, **to think effectively and to understand problems, it is necessary to have a basic knowledge of facts and terms: a vocabulary of chemistry.** Most of this background and vocabulary should have been obtained from your high school chemistry course. From time to time you may need to review material you studied in high school in order to understand the new material presented in this course. To help you review there are three Review Homework assignments. The first two of these must be completed next week and the week after next. The third comes at the end of October. Chemistry is a cumulative subject; what you learn this semester will build upon background material that you learned earlier.

**The rest of this syllabus and the course schedule are on the Web in WebCT and in the Gen Chem Web site. Go to one of these sites and read it. In WebCT look under the Course Information icon. The full syllabus contains information about how your final grade will be calculated, among other things.**

## **Lectures.**

During lectures we will discuss principles, outline goals, and present illustrations and demonstrations. A lecture is not intended to describe or explain everything you should learn; rather, it will indicate what topics it is important to study and should provide some insight into those topics. Lecture will also give you an opportunity to think about these topics and see if you understand them. You should take notes during lecture, but notetaking ought not be a passive, unthinking process. **Your notes should reflect your understanding of what you heard and saw, not just a repetition of what the lecturer said.** (A sample set of lecture notes taken by a Teaching Assistant (TA) will be posted on the course Web site (<http://genchem.chem.wisc.edu/>) and in WebCT (<http://webct.wisc.edu/>) shortly after each lecture.) Do not expect to learn everything you need to know from the lectures; you will learn far better by working with a group of other students outside of class or on your own. **The lecturer cannot learn for you. Learning is something you have to do.**

## **Laboratory**

Laboratory work is extremely important to an understanding and appreciation of chemistry. Examinations will include questions based upon the laboratory material. Each laboratory experiment will have its own criteria for grading and your TA will apply those criteria to evaluating your work. **You must successfully complete all laboratory assignments and achieve a lab score of at least 140 points in order to receive a passing grade in the course.**

During the lab period you will carry out the experiment, take notes, and complete our data analysis. *All your work must be turned in at the end of the period in the form of the duplicate pages from your lab notebook.* You will be evaluated on your pre-lab preparation, in-lab experimental technique and data analysis, and on your ability to observe chemical phenomena and record your observations in your notebook.

**Pre-lab Quizzes.** Pre-laboratory Quizzes will be available via WebCT and you can take them anywhere. You do not have to go to the Computer Testing Lab to take a Pre-lab Quiz. You can take each Pre-lab Quiz twice and your higher score will count. Pre-lab Quizzes must be taken before you go to your scheduled laboratory class; that is, if you have lab at 7:45 am on Tuesday, you must take the Pre-lab Quiz for that week before 7:45 am on Tuesday.

**ChemPages Laboratory.** ChemPages is an interactive, World-Wide-Web based encyclopedia of laboratory techniques. You will be able to access ChemPages from several computer labs around campus and from computers in your dorm using Netscape or Internet Explorer. There is a ChemPages icon under Lab Stuff in WebCT and a ChemPages link under Material for Lab in the General Chemistry Web page. ChemPages contains multimedia demonstrations of the laboratory techniques that you will use in this course. For almost every laboratory one or two ChemPages sections will be assigned—see your lab manual to find out which they are. You should complete these before coming to lab and before taking the Pre-lab Quiz.

## **Discussion Section**

Discussion sections are for questions, help, review, and problem solving relevant to recent lectures, homework, laboratory experiments, computer exercises, and other assigned material. You should be prepared when you come to the discussion class. You should have at least tried to work out the homework problems. Better yet, bring a printed copy of your homework with you, marked with areas where you need help. Ask specific questions of your TA. Make sure you understand the questions and the answers given by your TA and fellow students.

## **Textbook**

You should read the assigned sections of the textbook prior to lecture. After lecture you should reread and study the appropriate pages in the textbook. Be sure that you understand the examples and try to **work the sample exercises without looking at the answers** (which are at the end of the book in an appendix). At the end of each chapter you will also find a summary of important facts, concepts and operational skills that you should have mastered as you studied that chapter.

## **Exams**

There will be three evening exams of approximately 75 minutes each and a two-hour final exam. Each midterm exam will cover the lecture, discussion, special assignment, and laboratory material up to that point in the course and since the previous exam. The final exam will be divided approximately equally between the material since the

third exam and comprehensive coverage of the entire semester. The location of each exam will be announced later. A review session will be held before each exam. *No make-up exams will be given.* **If circumstances arise unexpectedly that preclude your taking an exam, please contact your TA or professor before the scheduled exam time.** An early exam will be given before each midterm at 3:30 PM for students who have conflicts with the assigned time. Please note the exam dates on your calendar and avoid scheduling anything at those times. If you have an unavoidable conflict, contact your professor well in advance.

Midterm Exams:	Monday, Sept. 23	5:40 PM
	Monday, Oct. 21	5:40 PM
	Monday, Nov. 18	5:40 PM
Final Exam:	Thursday, Dec. 19	10:05 AM

Exams given in Chemistry 109 last year are available in WebCT under Course Info, Old Exams. Objectives to help you study for exams and a list of study problems to work on for each exam are available in WebCT under Course Info, Exam Prep. Materials.

### **Quizzes**

Quizzes will be given every Thursday or Friday except the first and last weeks of the semester and Thanksgiving week. To take a quiz you must go to the Computer Testing Lab, located in room B122 of the Computer Science and Statistics building (1210 W. Dayton Street). When you get to the Computer Testing Lab you will be asked to show your photo ID, so be sure you have it. You will then log in to WebCT and take the quiz.

Depending on which discussion/lab section you are in, your quiz deadline is either on Thursday or on Friday each week. Use the table on the last page of the course schedule to find the quiz deadline time for your section. You must arrive at the testing room to start your quiz before this time. You can take a quiz at any time the room is open, as long as it is before your deadline. The Computer Testing Lab is open from 11:00 AM to 6:00 PM on Thursday and from 8:00 AM to 5:00 PM on Friday. If for any reason there is a problem with your taking a quiz at or before the deadline, consult with your TA to find an alternative time.

Quizzes will cover mainly material from each week's lectures (Friday through Wednesday), homework, and other assignments, though earlier material will sometimes be included. At the end of the semester your lowest quiz score will be dropped from your point total.

### **Online Homework**

Each week you will have an online homework assignment in WebCT. These assignments are available only in WebCT under the Online Homework icon. They include questions that test whether you understand the major concepts in each chapter and whether you can apply your understanding to solving problems. Three homework assignments are designed to help you review material from your high school chemistry course. You can do each Online Homework twice and your higher score will count. It is to your advantage to do the first Online Homework early, because it will provide you with study guidance. Because only your higher score counts, you can use the guidance to direct your study during the week and then score well on the second try near the deadline. Online Homework is due every Wednesday at 8:30 AM and can be done from any computer on campus with Internet access. Most students use a computer in their dorm room. At the end of the semester your lowest homework score will be dropped from your total points.

In order for you to view the online homework and pre-lab quizzes, your computer must be configured appropriately. Therefore we have provided a **Practice Quiz** that tests all the features you will need. You should do the practice quiz on the computer you expect to use for online homework and pre-lab quizzes to make certain that it works OK and you will be able to view everything you need to see. If you have trouble viewing something, the practice quiz will tell you how to correct the problem. The two items you are most likely to need, Chime and QuickTime, are available from the WiscWorld download area here on campus. The Practice Quiz is available only in WebCT under the Surveys icon.

### **Computer Assignments**

Each of the four computer assignments has its own set of directions that will be handed out in lecture and posted on the course Web site. The Computer Assignments are to be turned in to your TA at the time indicated on the assignment and in the Course Assignment Schedule.

### **Study Questions**

Study questions are available at the end of each chapter in the textbook. The answers to roughly half of these questions are given in the back of the book. These problems are typical of those you should master and you can use them for additional practice in problem solving. In some cases your online homework will suggest that you work on specific study questions to make sure you understand a concept. If you do not understand how to solve one or more study questions, ask your TA in discussion section or during office hours. Suggested study questions for each exam will be posted in WebCT under Course Info, Exam Prep. Materials.

### **Student Board**

So that I obtain feedback from students, I would like to set up a Student Board of Directors consisting of one representative chosen from the students in each discussion/lab section. The board will meet with me nearly every week at 5:30 PM on Thursdays to discuss course policies and course content. Meetings will take from half an hour to an hour depending on how much we have to discuss. If you are interested in participating, send me an email ([chem109-3@chem.wisc.edu](mailto:chem109-3@chem.wisc.edu)) as soon as possible.

### **No General Chemistry Computer Room**

Usually there are computers available in the chemistry building for general chemistry students to use for chemistry assignments. However, due to the fact that the computer room is being remodeled and expanded and the remodeling work is still going on, there is no general chemistry computer room this semester.

### **Electronic Mail**

All students at UW-Madison have access to free electronic mail through the university. This is a very useful resource and one that I hope you are already using. You are encouraged to contact me via electronic mail if you have questions about homework, problems with one of the assignments, or comments about the course or the work you are doing. Electronic mail is available at all times of day and night, so you can send messages whenever something comes to mind. Do not, however, expect immediate responses in the middle of the night! My E-mail address is [chem109-3@chem.wisc.edu](mailto:chem109-3@chem.wisc.edu), and you are welcome to send messages at any time. I will guarantee to answer emails at least once a day. Many of you will discover that I have another email address. If you have a urgent and timely need to contact me (an illness on the day of an exam, a family emergency) you may send a message to [burstyn@chem.wisc.edu](mailto:burstyn@chem.wisc.edu).

### **Health or Disability Problems**

If you have a condition that might result in a seizure or other problems, please discuss this with your teaching assistant. Such problems can become magnified in a laboratory and your TA should be aware of what to do if something happens unexpectedly. If you have a learning disability or other disability and need to make special arrangements to accommodate it, please contact Professor Burstyn and your TA the first week of the semester and set up the appropriate accommodation.

### **Cell Phone Policy.**

If you bring a cell phone to class or lab, please turn it off for the duration of the class period. If there is a situation that requires that you be able to answer your cell phone during a class, please inform your instructor before the class.

## Grades

Your grade will be based on a maximum of 1000 points divided as follows:

Best 16 of 17 WebCT Online Homeworks @ 5 points each <i>(see Course Assignment Schedule for due dates; includes both weekly and review homework assignments)</i>	80 points
Twelve Laboratories @ 20 points each <i>(each week's experiment is listed in the schedule; point total includes Pre-Lab Quizzes in WebCT)</i>	240 points
Four Computer Assignments Excel Exercise (10 points) Window on the Solid State (10 points) Alkimers (9 points) KinWorks (9 points) <i>(due dates are listed in the schedule)</i>	38 points
Best 11 of 12 WebCT Quizzes @ 10 points each <i>(given at 1210 Dayton Street Rm B122; times appear in course schedule)</i>	110 points
Practice Quiz, GALT, Post-Course Survey @ 4 points each <i>(see course schedule for due dates)</i>	12 points
TA Personal Evaluation @ 20 points	20 points
Three 75-min. midterm exams @ 100 points each <i>(dates and times are listed in the course schedule)</i>	300 points
Final Exam <i>(date and time are listed in the course schedule)</i>	200 points
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Total	1000 points

If necessary, some grades will be normalized to a common scale at the end of the semester to minimize differences in grading practices among discussion/lab sections.

### Letter Grades.

Final grades will be based upon the absolute scale shown below. If you score the number of points indicated, then you will receive the letter grade indicated, regardless of how many other students achieve the same grade. There is no curve. Therefore it is to your benefit (and to your friends' benefit) that you help other students learn and they help you learn. After each midterm exam you will be able to determine your probable grade by totaling your earned points, dividing by the total points possible at that time, multiplying by 1000, and comparing with this list.

A	890 points or more
AB	860 to 889 points
B	800 to 859 points
BC	770 to 799 points
C	600 to 769 points
D	500 to 599 points