Course Information

Instructor: Prof. Martin Gruebele  
A220 Chemical and Life Sciences Building  
email: gruebele@scs.uiuc.edu

Lab Director for Chem 203: John Overcash  
Merit TA: Brittany Coleman (colema30@illinois.edu)  
TAs: Fei Wang (feiwang4@illinois.edu), Courtney Talicska, (talicsk2@illinois.edu), Drishti Guin (dguin@illinois.edu), Anustup Poddar (apoddar2@illinois.edu)

Office hours: After lecture in A220 CLSA, or email Gruebele for an appointment if you are busy after lecture

These notes and other materials appear at the COURSE WEB SITE:  
http://www.scs.uiuc.edu/mgweb/Course_Notes/freshchem/

Welcome to Chem 202!  This is the first semester of our accelerated introductory chemistry course at the University of Illinois. It will be a tough but hopefully also fun class - at least, we'll try our best to make it so. The audience for this course usually consists of a mix of students mostly in chemistry, chemical engineering, physics and biosciences. The course connects applications with fundamental theories, and moves beyond High School AP classes at a pace suitable for those who excelled in High School Chemistry.

Chemistry is deeply connected to physics, biology and engineering. It can be very fundamental, but also very practical, since it is the science concerned with the makeup, properties and reactions of materials, ranging from etched silicon wafers used in IC manufacture, to chlorophyll that makes photosynthesis possible. Although two semesters can barely scratch the surface of all the interesting properties of substances used in industry and research today, we can at least study some of the general properties of materials and their transformations.

In this booklet you will find the following three things to help you along the way:

a) A list of frequently asked questions about the course, and answers, on pages 2-4.
   1) Who do I go to with questions?
   2) What material will be covered?
   3) What about the book and lecture notes?
   4) What work do I have to do to complete in this course?
   5) Should I take lecture notes?
   6) What is the grading scheme?
   7) What about TA quizzes, TA homework, and Chem L quizzes?
   8) What about makeup labs, exams, final?
   9) What about missed labs, exams?
  10) What's on the hour exams?
  11) What about regrades?
  12) What about exam locations, times and review sessions?
  13) What is on the final exam?
  14) What do I do in the first week of lab and quiz?

b) A Lecture Schedule summarizing lecture dates, exams, topics covered, and reading assignments is also available on the web site. Refer to the Chem Lab Manual for details about the Chem 203 labs.

c) Taking lecture notes is a good idea: things written down are remembered better. However, for your convenience, you'll find a brief set of lecture notes on the 202 website. They provide a condensed summary of the lecture material with an emphasis on the most important and basic points, in the same order as the lectures. Some of the material covered in depth in the lectures and notes is only briefly touched upon in the book, and vice versa. It is very important that you master both the lecture and the book reading assignment. We don't always repeat in lecture what's in the book, since we figure you're all smart enough to read and understand the book.

You should file these lecture notes with your own handwritten notes, so you have them handy during lecture and while you review for exams. Gruebele will also have them up on a Powerpoint presentation as needed.
Frequently asked questions:

1) **Who do I go to with questions?**
For questions about the quizzes and homework, it’s usually best to first try your quiz section TA. If the TA can't help you, see the course instructor Prof. Gruebele. Gruebele will help out with homework, general questions about chemistry, or anything else about the course you need help with during office hours in A220 CLSA.

The Learning Center on the second floor of Chem Annex is also very helpful, and staffed by knowledgeable TAs.

For questions about the lab, try your lab section TA, who will refer you to Prof. Boulatov if necessary.

If you are thinking of switching to a different section of Chem 202, you need to talk to Prof. Gruebele first. The mechanics will be taken care of by the staff in 107 Chem Annex. Likewise for switching to 102.

For questions about course mechanics only, see the staff in 107 Chem Annex. This includes signing up for make-up hour exams, and the like. They cannot help you with course material.

2) **What material will be covered?**
Check the lecture schedule for a summary of lecture topics with dates, reading assignments from the lecture notes, and homework assignments to be done on the computer, or on your own for discussion in quiz section.

3) **What about the book and lecture materials?**
The book for 202 is "Atkins and Jones ("AJ"), Chemical Principles," newest edition. We will **not** go in the order of the book. Reading assignments for each lecture are listed in the lecture schedule, and should be completed **before** lecture (except the first of course!), so you are prepared for the lecture material. This is a university-level accelerated course, so the lecture **will NOT** simply repeat what's in the book, but explore the topics starting from there.

The lecture notes in PDF format on the website do follow the order of lecture. There is also a WebText on quantum mechanics on the web site, and we will follow this WebText for the first several lectures of the semester.

4) **What work do I have to complete for this course?**
You have to attend lecture, do assigned reading, turn in the online homework assignments, and attend quiz section meetings. You have to take all quizzes (one will be excused), the two hour-exams and the final exam.

5) **Should I take my own notes even though there are lecture notes on the web?**
Yes! The web notes summarize the facts, but are short on explanation. Their idea is to free you from having to copy every diagram and equation off the board, so you can think about the explanations given in lecture. The lecture notes are part of the regular reading assignments: looking them over before lecture will clue you in as far as what notes are worth taking and what notes are already in the notes.

6) **What is the grading scheme?**
In this course, you are responsible for computer homework assignments, quiz attendance, quizzes given by your TA, 2 hour exams, and a final exam which includes a take-home final paper. The breakdown is shown below:

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight (%)</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Three hour exams</td>
<td>45%</td>
<td>(each exam on a 0-100 RAW scale)</td>
</tr>
<tr>
<td>TA quizzes</td>
<td>15%</td>
<td>(about 7, 1 low/absence dropped, includes 5% Quiz attendance)</td>
</tr>
<tr>
<td>Online homework</td>
<td>5%</td>
<td>Lon Capa system, log on from Chem 202 website</td>
</tr>
<tr>
<td>Final exam</td>
<td>35%</td>
<td>(weighted towards last 1/3 of course material)</td>
</tr>
</tbody>
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Grading will be on a scale of roughly 20% As, 35% Bs, 35% Cs, 10% Ds and a few Fs, based on past experience with student performance. There will be **no scaling of scores** because the quizzes are written by all TAs together. Instead, we will let you know for each exam and for the quiz average what score range corresponds to what letter grade. Typically, exam averages are around 60-65/100, with standard deviations around 15, so 60 is obviously not a D (as in High School grading), but around a B. Quiz averages are around 6.5/10 with standard deviations around 3.
7) What about TA quizzes, online homework?
Your TA quiz sections are an important part of the course for going over problems, and working again through difficult materials. The quizzes will amount to 10% of your grade (your TAs will give about 7 quizzes written together by the whole group of TAs, and we will drop the lowest score). Unlike the hour exams and final, the quizzes are fully written-out problems, not multiple choice. Attendance and participation during quiz section is another 5%.

The online homework is shown in bold in the Lecture Schedule, and will be graded on a 0-1 scale for each sub-question answered (0 = wrong; 1 = right). It is 5% of the course grade, and you get 2 tries on each question. Don’t sweat it if you miss a question: each is worth about 0.08% of the course grade. But make a note and ask your TA about it if you want.

The written homework from the book need not be turned in, but DO IT! At least one question from each set will be featured (perhaps with the numbers changed) on the exams. You TA will be happy to go over them if you have questions. Feel free to do it with friends, or consult the solutions guide to check your answer, but do it for real.

The homework is not heavily weighted, but it is VERY IMPORTANT: only through problem-solving are you going to learn the concepts you need for the exams. Skipping the assigned homework is certain to lower your exam scores, which make up 80% of the course grade. On the contrary, if you find you missed a problem after checking the answer guide or when the TA goes over the problems, assign yourself another similar one. Don't look at the solutions manual before you have worked hard on a problem. There is no solution manual for the exams until afterwards, when it's too late.

8) What about makeup exams, makeup final?
An alternate hour exam is offered the same day; you must sign up for it a week in advance in 107 CA; ONLY people on the alternate exam list will be allowed to take it; walk-ins are NOT ALLOWED. THERE IS NO OTHER MAKEUP.

THERE IS NO MAKEUP FINAL. Every course has a non-overlapping final slot assigned based on its time slot, so there should be no conflict. Note the time of the final exam on the Lecture Schedule and in the Fall schedule of classes. Make sure there are no conflicts with other classes (e.g. too many finals in one day). If you miss the Final, you cannot get a passing grade in this class, no matter how brilliant your previous work. If the Final somehow presents a problem, let us know at the beginning of the semester.

9) What about missed exams?
With a valid medical excuse, a certified athletic conflict (i.e. you're playing in an extramural game representing the University), or a CERTIFIED emergency (get a letter from the Dean), a single hour exam can be excused. Your grade will be then be calculated based on two hour exams only. Otherwise, an "I" grade must be assigned for the course unless you can make an arrangement for a makeup exam. You should check in advance with the instructor if possible. This is undesirable, particularly if you had a "bad day" on one of the exams you already took, since you're missing a chance to improve your grade.

10) What is on the hour exams?
Each hour exam will have about 20 multiple choice questions (100 points). The lecture notes are a very good study guide in addition to your textbook. As a rule, you are responsible for all the material covered in lecture, lecture notes, reading assignments in the textbook, and for material covered by your TAs in your quiz sections.

Solutions will be posted on the web after every exam, and your TA will go over the "ickiest" of the problems in quiz section. Grades are usually available the next quiz section day. Only the exam booklet will be returned to you, not the bubble sheet: if you want to compare solutions afterwards, it helps to circle your answers in the exam booklet, not just on the answer sheet.

To get an idea of the flavor of the multiple choice problems, check out the sample exams that will be posted on the web before the actual hour exam.

The TAs will hold review sessions before the exam, which past students have indicated to be very helpful. Don't miss them.

11) What about exam regrades?
You MUST first see your TA about regrades. He/she can take care of obvious errors such as scores added up incorrectly. The exams have a carefully laid out grading scheme, uniformly applied to all 200-300 people who typically take it. Thus, requests of the type "I should have gotten two more points for this..." CANNOT be accommodated. Only grading errors will be fixed. Only the TA can pass regrades on to the instructor if they cannot resolve the problem for you.
12) What about exam locations and times?
The times of all exams, and the lectures covered, are listed in the Lecture Schedule. Hour exams will be held evenings to give us plenty of time to settle in and collect exams at the end.

Conflict exams: contact instructor at least one week in advance: you must sign up in Chem Annex on the signup board near the central staircase.

The Final Exam will be held on Friday after the last lecture this year. The location is yet to be determined. Make sure you confirm exam locations and times (they are announced in a lecture preceding the exam) because times and locations sometimes have to be changed.

There will be a review session conducted by your TAs before each of the exams including the Final, during lecture time. The review will emphasize those topics covered in most detail on the exam. You are also encouraged to attend any review sessions your TAs may hold in addition.

13) What is on the final exam?
The final exam will be 2.5 hours long and consists of approximately 60 multiple choice questions. The multiple choice questions will cover all the lecture material and all homework problems assigned during the semester evenly; they will NOT cover lab material. A slightly larger fraction of questions will cover the last few lectures (not tested on the hour exams).

14) What do I do during the first week of lab and quiz?
Go to the quiz section meeting you signed up for (see course catalog on the web for locations). It is important that you show up for the first scheduled quiz meeting, even if you plan on asking for a switch; let the TA know if you are switching. For lab, see the "Chem 203/205 Introduction to Chemical Systems" lab manual for first meeting time. An announcement will be made in the first lecture.

Remember:
- Keep up to date in your reading and book homework assignments; we're not going to hassle you about it. Remember: book homework problems show up on the exams!
- Spend 3 or more hours a week reading and doing homework problems; any less and you are not getting your tuition’s worth out of this course.
- If you have a problem you can't figure out on your own, talk to a friend, your TA, or the instructor. Don't just let it slide.
- Find a study partner: several people can figure out things a lot faster than one.
- Don't wait until the last second, when your problem has become unsolvable.