

CH302 Principles of Chemistry II

Vanden Bout Spring 2009

52385

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Note: I have several email addresses, but your emails will be answered most promptly if you use the one specifically for this course

Your number one resource for the course will be our webpage. You should check it often

Web Page: courses.cm.utexas.edu/dvandenbout/ch302 (case sensitive!)

Help to Succeed in CH302

There are a large number of people who are working to help you succeed in CH302. Besides myself there is a vast array of teaching assistants looking to help you. Go to see them. Come to see me. Ask questions. Get help. It is not difficult. For a list of all the various times you can find me or a TA look at the webpage.

I'm serious about the point in the last paragraph. Don't show up on the last day of class (or after the final) and ask "What can I do to pull my grade up?". I'll tell you to go to office hours 2 or more times a week. Of course if the class is over this will be of little help to you. That is why I am saying it now. There are times for every schedule. Make it a **habit** rather than only cramming before the exam.

What we will do in a paragraph or less

We'll learn a lot of chemistry. In class we will try to learn stuff rather than just take notes.

To reinforce this learning we will do homework. This will not be graded as everyone will be encouraged to work together and teach each other. The homework will not be multiple choice or from the book, but will be in the form of worksheets with a large number of problems developed to help you develop a deeper understanding of what we did in lecture.

How will I get a grade? Quizzes and Exam. Quizzes will be in class. Typically every other week. Quizzes will be about 20 min. Exams will be at night. There will be a final. Can I drop an exam? (yes) Do I have to take the final if I have a ridiculously high grade? (no) See further pages for the details.

CH302 COURSE OUTLINE

Lecture	Day	Date	Topic	Course packet Lecture number	Quizzes and Exams
Physical and Chemical Equilibria, Intro to Aqueous Equilibria					
1	T	1/20	Physical Equilibria—Vapor Pressure	1	
2	H	1/22	Phases and Phase Transitions	2	
3	T	1/27	Solubility	3	
4	H	1/29	Colligative Properties, Binary Mixtures	4	Quiz 1
5	T	2/3	Reactions at Equilibrium, Mass Action Law	5, 6	
6	H	2/5	Equilibrium and Stress, Van't Hoff Equation	6, 7	
7	T	2/10	Aqueous Equilibria: Water autoprotolysis	8	
8	H	2/12	Aqueous Equilibria: Solubility	9	Quiz 2
9	T	2/17	Aqueous Equilibria: Monoprotic acids and bases	10, 11	
	W	2/18	Exam 1		Lectures 1 - 9
Complex Aqueous Equilibria and Electrochemistry					
10	H	2/19	Buffers Systems and Neutralization	12	
11	T	2/24	Titrations	13	
12	H	2/26	A stepwise approach to pH calculations	14, 14addendum	
13	T	3/3	Solving Complex Equilibria: Dilute Species	15	
14	H	3/5	Polyprotic Acids	16	
15	T	3/10	Balancing Redox Reactions	17	
16	H	3/12	Electrochemical Cell Convention and Famous Batteries	17	Quiz 3
17	T	3/24	Standard Cell Potentials	17	
18	H	3/26	More advanced electrochemistry calculations	18	Quiz 4
19	T	3/31	Famous batteries	18 addendum	
	H	4/2	An overview of exam material Exam 2		
	H	4/2	Exam 2		Lectures 10 - 19
Kinetics, inorganic chemistry and organic chemistry					
20	T	4/7	Reaction rates	19	
21	H	4/9	Differential and Integrated Rate Laws	20, 20 addendum	
22	T	4/14	Kinetic Theory	21	
23	H	4/16	Reaction Mechanisms and Famous catalysts	21,22	Quiz 5
24	T	4/21	Famous Examples of Group I-IV Chemistry	23	
25	H	4/23	Famous Examples of Group V-VIII Chemistry	23	
26	T	4/28	Organic Chemistry-Hydrocarbons	24	
27	H	4/30	Organic Chemistry-Functional Groups	24	Quiz 6
28	T	5/5	Polymers and Biopolymers	25	
	H	5/7	Overview of material on Exam 3		
	H	5/7	Exam 3		Lectures 20-28

Details about stuff for the course

Calculator: You will likely find a calculator useful for the course. However, we will at times be taking quizzes and/or exam without the use of a calculator at all. As such you should be prepared to deal with simple algebra without leaning on your calculator to solve everything. When we are using a calculator you can use anything that is not a wireless device (cellphone, iTouch, etc...)

iClicker: All students must have an iClicker. These are available at the University Co-op and have an ISBN number of 0-7167-7939-0. You can likely buy them elsewhere as well. These are NOT the eInstruction CPS clickers. These are long, white, and skinny with only 6 buttons. We will use them daily in class. You can use ANY iClicker for this class. So if you already have one don't get another. You will register the iClicker number via the web and then you are good to go.

Book: We will be using *Chemical Principles* 5th Edition, Steven S. Zumdahl Houghton Mifflin (2005), ISBN: 0547005962.

We will use the book as resource but no problem sets will be assigned directly out of the text.

Eduspace: If you bought the textbook at the Coop they should have given you a code for an online version of the textbook along with the eduspace website. This site is full of additional problem and tutorials for you to work.

To register for the "course" on the site use the document found on the webpage.

Grading

It would be lovely if everyone would just promise to learn and I would promise to try to help you as best I could. However, as it works we need to hand out grades in an effort to evaluate how well people have learned the material in the course. Here is the general grading procedure

Overall SCORING for the Course

Your overall score will be based on 1000 possible points. Grades will be based on the following

A > 900, B 800-899, C 700-799, D 600-699, F 599 and below

You will earn points in the following ways

- Three night exams worth 180 points each (that is 540 total)
- A final exam worth 300 points
- The best four out of six in class quizzes at 40 points each (that is 160 total)

The quizzes and exams will be fair. So your grade will be based on how you perform not some curve based on how the class performs. Your grade is based on your score.

The exam and quiz schedule is posted on the course schedule and can always be found on the webpage.

Alternatively grading schemes are on the following pages.

Alternate Grading Schemes

If the traditional grading scheme is not for you, I will offer two alternatives

Option 1

A grading scheme based on the question, "if I ace the cumulative final can I get an A for the course?" In determining your course grade I will automatically determine whether your score on the final exam is higher than your cumulative average and if it is, I will substitute the exam score. If you score 90% or above on the final, you get an A for the course even if your cumulative course average is below 90%. If you score 80% or above on the final, you get a B for the course even if your cumulative course average is below 80%, etc. This is an excellent option for the student who bombs more than one test, or, believes that he or she has really started to learn the material over the course of the semester but has scores that make an "A" unattainable. To be eligible for this option, you have to participate in the course by taking at least two of the three exams and at least three of the six quizzes. So don't just wander into the final after a semester in Europe and expect this opportunity.

This option comes with a warning. If you do very poorly on all the exams it does not mean you can't use this option. However, it should be apparent that if you have a "D" on every exam that you might just get a "D" on the final if you don't change how you are learning. As such if you bomb the first exam don't just blow it off and say "I can always ace the final". Then you bomb the second exam and againIf you do poorly you need to wake up and smell the coffee. Get help. Study more. Work extra problems. Ask questions. Don't just assume you'll make it all up in the last couple of days before the final. It is not that it is not possible. It simply isn't likely.

Option 2

So you ace the tests and quizzes and really wish you could be home a little earlier for the summer. Is it possible? Yes. Very simply, if you score 90% (630 out of 700 possible points) on the three exams and four of six quizzes, you will not have to take the final. Note: this only applies if you have an "A". You cannot simply opt to "take your C" and be done.

Homework

We will not have formal homework. Practice problems will be available on the webpage. You should work them all even though they are not turned in.

Quizzes

Quizzes emphasizing problem solving will be given six times during the semester. The quizzes will occur every two weeks during the last 20 minutes of class. Quizzes will consist of 8 questions worth five points each. The questions will be drawn from the same data bank as the exams and will give you a flavor for what the exams will look like. The quizzes will also offer you the opportunity to keep up with the material so you won't have to cram before exams or the cumulative final. Only your four best of six quizzes will count.

Quizzes (iClicker)

Quizzes will be given in class via the iClicker. You will be able to replace one of your in-class quiz scores with your iClicker grade. The iClicker grade will be based upon a available point total. Typically 100% is given if you have at least 80% of the total points. Points available each day are base on participation not correct answers.

Exams

Three examinations will be given during the semester on CH302 material. These will be given about once a month during the scheduled class time. Each examination will consist of 30 six-point multiple choice questions that will be machine graded. These exams will look remarkably like your quizzes and worksheets in content.

The three exams will be given in the evenings on the scheduled days in the rooms posted. You must go to the correct room. No exams scores will be dropped. Be sure and bring your calculator to the exam (unless we are not using them). I cannot provide calculators. You CANNOT use a PDA, or cell phone as your calculator (or any other gadget that is NOT a calculator). An alternate exam time will be available only if you have a University related conflict (lab class, etc...) The times of the exams are posted on the webpage.

Each student will receive a unique exam copy with a specific version number on it. There is a different exam version for every student in the class, no two students can have the same version numbers. **It is therefore very important that you keep your copy of each of your exams.** You need this copy in order for us to verify you as the owner of that copy and version number. We only do this verification when we have a case of two or more students with identical version numbers on their exams. Each student must verify their copy in order to receive a grade, otherwise their score will be changed to a zero for that exam AND they will be reported to the dean as suspect of cheating. **PUT YOUR VERSION NUMBER ON YOUR QUIZ AND EXAM AND KEEP YOUR COPY OF THE QUIZ OR EXAM.**

Final

A Final exam cannot be made-up in any way. Show up at the right place and the right time or get a zero on the exam. The final exam WILL be comprehensive. This means that all the material covered during the course will be on the exam. The final exam will be counted as 30% of your overall grade. If you keep up with the material for the semester, the final will not be any more difficult than the three exams. It will be extremely difficult if you try to cram for it one day ahead. Keep up and make the grade. I will not allow you to take the final early either. The time for the final is published when the course schedule is made but it is subject to change.

Missed Quiz or Exam

You can make up a missed quiz or exam for one of the following reasons.

1. You are away from UT as part of a University-sponsored activity. For such instances you will provide written documentation on UT Letterhead explaining the reason for your absence.
2. The exam is in conflict with a religious holiday. For this you will provide written notice of the conflict at least 14 days in advance.
3. You suffer chronic, documented illness that requires you to miss multiple quizzes and exam. In this case you should contact me as soon as you are able.

What if I miss one quiz or exam? Not to worry. It will be taken care of. You get to drop your lowest two quiz scores. If you miss an exam your final will be scaled to 180 points and substitute for your missed exam. This will be calculated for you. You don't need to do anything.

Religious Days

Religious holy days sometimes conflict with class and examination schedules. It is the policy of The University of Texas at Austin that the student must notify each instructor at least fourteen days prior to the classes scheduled on dates he or she will be absent to observe a religious holy day. For religious holidays that fall within the first two weeks of the semester, the notice should be given on the first day of the semester. The student may not be penalized for these excused absences but the instructor may appropriately respond if the student fails to complete satisfactorily the missed assignment or examination within a reasonable time after the excused absence

Cheating

If you get caught cheating in any way whatsoever you will have to discuss the situation with me. I will arrive at a penalty and write up a formal report. If you deny the allegation, I will proceed by filing a formal report to the Judicial Services in the Dean of Students Office as is policy. The final penalty would be decided by Judicial Services after a hearing on the matter. For more information read the General Information Catalog about scholastic dishonesty (i.e. cheating).