

Syllabus, Chemistry 301
Dr. Stacy Sparks
Spring 2011

Textbook for course: Zumdahl, Steven S., Chemical Principles, Houghton Mifflin Company, Boston, 6th edition.

*We are using the CLeBook version, which comes with a black and white loose-leaf copy of the text. MAKE SURE TO KEEP THE CARD THAT COMES BOUND WITH YOUR LOOSE-LEAF TEXT! THIS CONTAINS YOUR ACCESS CODE FOR THE EBOOK! (For a full discussion of the textbook and other items you need for the course, please see the pre-class information document posted on our course website.)

Course meets TT 12:30-2 in Welch 2.246.
Unique #: 51605

Dr. Sparks

Office: Welch 4.312

Office Hours: See below.

Email: ssparks@mail.utexas.edu

***The class discussion board and email is generally the best way to get a hold of me outside of office hours – you will get a much faster response than if you leave a message on my voicemail. *Please see the notes below about use of email and the blackboard discussion page.*

Teaching Assistant: Scott Grimes - sag2364@mail.utexas.edu

How can I get help with this class?

There are numerous opportunities for you to get help with the course material:

- Class discussion board (See below.)
- Residence Hall Study Groups: These provide easy opportunities for you to meet up with other students from our class section and there are student facilitators on hand to help out with problem-solving. (See link on our website.)
- *Office Hours!* (Listed last, but definitely most important.) You should make sure to keep up with the material and come to office hours every time you have a question. Office hours tend to get busy right before an exam, but if you keep up and come to office hours each week you can get one-on-one help. Here is your chance for free help from the very people who organize and plan the course – me and the TAs. UT is a big place. If you want the chance to know your professors and get help from the outstanding TAs we hire, take the initiative and make the time to attend office hours. (Plus, we get bored hanging out there by ourselves.)

So, when are those office hours? Here are the office hours for regular, non-exam weeks. Note that we may alter these for exam weeks and finals. Changes will be clearly announced and posted.

Monday	11 am - noon	Cubicle A	Scott
Tuesday	9:15-10:45	Welch 4.312	Dr. Sparks
	6:00 – 7:00 pm	Cubicle A	Scott
Wednesday	9:00 – 10:00 am	Cubicle A	Scott
Thursday	10:45 am – noon	Welch 4.312	Dr. Sparks
Friday	4:00 – 5:00 pm	Cubicle A	Scott

*All cubicles are located in the 1.300 hallway of Welch.

Which should I use: Email, the discussion board, or office hours?

First, a comment on email: While the TAs and I love to hear from you, the number of emails we receive from students in a class this size can be overwhelming. I could ask the TAs to spend hours upon hours answering email, but I prefer to utilize their time with extra office hours so you can get one-on-one help. To this end, I use a class discussion board to manage many of the online questions. In this way the TAs and I can answer a question once (rather than over and over in numerous individual emails) and other students can benefit from the answer. Similarly, you can benefit from skimming the postings on these pages and maybe learn the answers to some questions you hadn't even realized you had. The TAs or I will check the discussion board at least twice per day to ensure a speedy turn-around time on answers.

See below for a description of which help source is best suited to different types of questions:

- General questions over course policies: Discussion board

“Do we get to drop an exam in this class?” (Of course, the answer will be to read the syllabus!)

- Questions over simple concepts and problems: Discussion board or office hours

“I really don't understand question 3 on problem sheet 5. I tried figuring it out from the periodic trends and found the ionization energy should get larger. Why isn't that the correct answer?” (Note that for questions like this, the more information about how you tried to solve the problem, the more help we can be.)

- Questions over complex concepts and problems: Office Hours

You can try the discussion board, but these types of questions are most appropriately discussed in person at office hours. Answering complex problems online is time-consuming and does not allow us to watch you work through problems and help you figure out where and why you are encountering difficulties. We would rather figure out the core concept you have a misconception about than just help you solve the one particular calculation you can't do. You

are welcome to post the question, but note that the TAs or I may just suggest coming to office hours. (Your fellow students may be more helpful and be willing to help you sort it out electronically. You never know until you try.)

- Questions about the mechanics of Quest or Blackboard: Discussion Board
- Questions about the mechanics of the eBook: Publisher's Help Site or Discussion Board
- Personal questions or questions you are not comfortable posting on the discussion board: Email

To encourage the use and checking of the discussion board, I will post my own helpful comments and suggestions on the discussion board. I expect you to check the discussion board each day.

Exam Schedule

All exams, with the exception of the final exam, are held on Wednesdays from 7-9 pm.
Location to be announced.

Exam 1: February 9th

Exam 2: March 9th

Exam 3: April 6th

Exam 4: May 4th

Final Exam: Saturday, May 14th, 2-5 pm, location TBA

IF YOU HAVE CONFLICTS WITH ANY OF THESE TIMES: You must bring documentation of the conflict to Jeff Daily in Welch 2.212 (the room with big windows into the hallway down from our classroom) by January 28th, 2010.

Class Announcements

At the end of every class meeting I will post class announcements. While we will sometimes make other announcements via the webpage or email, these end-of-class announcements are available only in class and you are not guaranteed to later see them on the web. You should make sure to read these announcements each class day and take notes if you deem it necessary. If you miss a class, make sure you get the announcements from a classmate.

Generally these announcements will include some combination of the following:

- Problem assignment: A listing of problems you should attempt to complete prior to the next class meeting.
- Important postings to watch for on the web, including exam information and extra practice problems.
- Things you should do to prepare for the next class.
- Textbook problems: Suggested problems for you to try as practice. These will not be collected or graded, but are good practice to ensure you understand the class topics.

These end-of-class announcements serve two purposes: They ensure that I get important information to you in an organized way. They also (AND THIS IS IMPORTANT) serve as your indicator that I am done for the day and you can start packing up your books, moving around the room, etc. Please do not start putting your things away until these announcements are posted. The noise of even a small percentage of 200 students unzipping backpacks and shuffling papers combines to create lots of noise. It is distracting to your classmates, distracting to me as I try to wrap up the lesson, and (to put it bluntly) rude. For my part, I recognize the fact that many of you have a hike across campus to your next class and I will make sure to end the class on time each day.

Basis of Course Grades

- Exams (60%)

You must bring your valid University ID and several number 2 pencils to each exam. (Did you notice I did not mention a calculator? See more about that later.) The lowest grade of the four exams will be dropped. If you miss an exam, *for any reason*, it will be counted as a zero and that exam will be the one dropped. Do not skip any exams! You never know when you will have an emergency (sickness, accident) that will force you to miss one. There will be no make-up exams. That said, if you do happen to have an emergency (hospitalization, accident, etc.) that forces you to miss an exam, please do let me know.

Exam grades can be checked via Quest (see below) under the “assignment grades” button. There is a one week deadline for any regrade requests.

- Final Exam (30%)

This exam will be comprehensive and will be given at the date and time assigned to our class by the university. We will not give the final before or after the scheduled date and time. Therefore, you should not schedule airline flights, make arrangements to leave town, or make other plans that will interfere with the time scheduled for our final exam.

Under certain circumstances, you may be exempt from the final. See the “Grade Assignment” section below for details. (An enticement to keep reading the syllabus.)

- Homework

We will not have graded homework in the class. Many problem sets and other opportunities for practice will be provided and it is, of course, to your benefit to take advantage of them!

- Quizzes (10%)

Quizzes may be announced or unannounced. These will be scantron, so be sure to bring a pencil to each class. We will have at least 7 quizzes during the semester and you get to drop your lowest two quiz scores.

- In-Class iClicker Questions (Up to 2% bonus): These in-class questions are unannounced, but there are usually some every day. These questions serve two purposes: They help you stay actively engaged in the class (which is necessary for you to learn the concepts) and they provide me with instant feedback on how well the class is understanding the material. They also (and this is probably of great interest to you) provide you an opportunity to earn bonus points to be

counted towards your grade. You must bring your iClicker remote to class to earn credit. No make-ups for iClicker questions.

Grade Assignment

Exam Points = (Average of your 3 highest regular exam scores) * 0.60

Final Exam Points = Final Exam Percentage Score * 0.30

Quiz Points = Average of your quiz grades after dropping the lowest two scores* 0.10

iClicker Bonus = ((Total pts earned on iClicker questions)/(Total pts possible over semester)) *2

Overall Course Score = Exam Pts + Final Exam Pts + Quiz Pts + iClicker Bonus

Letter Grade Assignments

Overall Course Score	Letter Grade Earned
93% and up	A
90% - <93%	A-
87% - <90%	B+
83% - <87%	B
80% - <83%	B-
77% - <80%	C+
73% - <77%	C
70% - <73%	C-
67% - <70%	D+
63% - <67%	D
60% - <63%	D-
Less than 60%	F

An important note on course grades:

I do not curve grades. You will receive the grade you earn based on the above point scale. With the +/- grading system, grade ranges are narrow and an 82.8% will still be considered a B-. "I really know the material, it just didn't show in my exam grades." is NOT a good excuse. If you really feel your exam performance does not reflect your knowledge, come talk to me early in the semester so I can help you figure out where you are running into difficulties. The TAs and I all want to help you understand the material. We are also willing to help you figure out how to study more efficiently and appropriately for the exams so that you can demonstrate that understanding at test time.

Exemption from the final exam: If your four regular exam scores and your quiz scores average to at least an 80% using the formula below, you may choose to be exempt from the final. If you qualify for this exemption and you do not take the final, you will receive the grade your score warrants based on the above grading scale. (i.e., An 84% average based on the below formula would earn you a B for the course.)

Here is the exemption formula:

(Average of your four exam grades)*0.9 + (Average of your highest 5 quizzes) * 0.10

Important facts about this exemption opportunity:

- iClicker bonus points do not count toward achieving this 80% average and are not added in when determining the grade you earn if you take the exemption.
- You must have taken all four exams – no exam grades are dropped in determining this qualifying score.
- You do not need to inform me that you are utilizing the exemption. If you don't take the final, I will calculate your grade with the exemption formula above.
 - IMPORTANT: If you do not qualify for the exemption (do not have an 80% by the exemption formula) and do not take the final, your score will be determined by the regular "overall course score" formula and you will almost certainly fail the course.
- If you qualify for the exemption but choose to take the final anyway, I will calculate your grade both ways (regular "overall course score" calculation with the final and the "exemption" calculation without the final) and award you the higher score.

Student E-mail and Internet Access

When emailing, *make sure you send us all the needed information to enable us to answer your question and reply to you. This includes your full name and, if it is a grading issue, your EID.*

When you email us a question, we will reply to the address you emailed from. Please consider this and email us from your own address – if you email us from a friend's or parent's account, they will see the reply! We will send any class emails to the official email address you have on file with the University. Please make sure this address is current and that you check it regularly.

Course Web Page: We use the university Blackboard pages at courses.utexas.edu. Note that it may take up to 24 hours for you to gain access to this site once you have officially added the course.

What should you bring to class?

Besides your notes and writing utensils, you should make sure to bring your iClicker remote.

How about a calculator?

Nope. Not needed. I reserve the right to change that policy later in the semester if I deem it necessary, but currently no calculators needed or allowed in class. Now, if you choose to use a calculator during the lecture to check problems, the TAs and I aren't going to accost you. However, you are not allowed to use a calculator for quizzes or exams. I would highly recommend you try the iClicker questions and problems sets without the calculator in order to best practice for the exams. If you do practice problems from the text, you will likely need a calculator as they are written with the assumption you will be using one and will not have numbers that are easily solvable by hand.

Will I be prepared for future classes if I don't use a calculator in this one?

I have yet to meet a student who can't plug numbers into a calculator. I meet many students who can't figure out how to set up the problems because they don't have a good understanding of the concepts or the problem-solving abilities necessary to put the concepts together. Yes, you should be just as prepared for future classes, and hopefully better prepared.

Anything else I shouldn't bring to class?

Your laptop computer. Actually, you are welcome to bring it, but please don't have it out and open. From experience, most people who utilize a laptop during class can't resist multi-tasking and also looking at Facebook, answering email, etc. This keeps you from being actively engaged in learning (in

which case you might as well stay home) and is very distracting to those sitting around you. If you truly rely on a laptop for note-taking and are sure you can refrain from other tasks, come talk to me and we can discuss.

If you miss a class:

Catching up and finding out what you missed in class is your responsibility. I suggest getting a copy of the course notes from another student in the course. There is a copy center in Welch 2.228, right across the hall. *After you have studied those notes*, feel free to bring them by office hours and the TAs or I will help you with any questions you may have. We are happy to help you catch up, but understand that we can't re-teach the entire lecture for you during office hours, since other students will also have questions. Do your part and study the borrowed notes and the text first; then come to office hours with questions. Hint: Post-it notes make a great way to write down questions right where you have them in the notes. Get the big ones so you or I can write the answer right on the post-it.

Dishonesty: Dishonesty (cheating) of any form on coursework will not be tolerated.

Important General Information:

Lower division chemistry office: Wel 2.212, 471-1567

(Direct all questions regarding adds, drops, etc. to this office.)

Students with disabilities: Any student with a documented disability who requires academic accommodations should contact the Services for Students with Disabilities area of the Office of the Dean of Students at 471-6259 (voice) or 232-2937 (Video Phone) as soon as possible to request an official letter outlining authorized accommodations. Please provide me this official letter as early as possible so I can make appropriate accommodations.

Here are University dates and deadlines with respect to course registration. Hopefully you will not need these dates, but just in case...

Tuesday, January 18	Classes begin. Department adds and drops for lower division courses will occur in WEL 2.212. Any questions regarding your registration should be brought to this office Monday through Friday between 7:30 am and 4 pm.
Friday, January 21	Last day of Official Add/Drop and Late Registration period. Last day to add electronically.
Wednesday, February 2	Twelfth Class Day. Official enrollment count is taken. Last day to drop a course for possible refund.
Monday, March 28	Last day an undergraduate may, with Dean's permission, withdraw from the university or drop a course for academic reasons. Last day to change registration in a course between a letter grade and P/F.
Friday, May 6	Last day of classes.
Monday, Tuesday, May 9, 10	No class days.

Religious Observances and Make-Up Exams or Quizzes

It is a University policy that a student may make-up work missed due to observance of a religious holiday and I am happy to accommodate that. Please notify me by the 12th class day if you have a conflict with a scheduled exam to insure that you can make up the exam. (You must notify me as well as following the instructions for make-up exams listed in the exam dates section.) Please notify me in advance if you will miss an announced quiz. If you miss a pop quiz due to a religious holiday, notify me as soon as possible after the quiz date.

Tentative Course Schedule: We will likely get slightly ahead or behind on these topics, but this will give you a general idea of the order in which we will cover the topics. Exam dates will not shift even if we are slightly off schedule.

Lecture Number	Day	Date	Topic	Chapter #
1	T	1/18	Syllabus, course overview , Intro to atomic structure, gold foil experiment, electromagnetic radiation	12
2	H	1/20	Wave Particle Duality of Light – photoelectric effect, De Broglie wavelengths	12
3	T	1/25	H spectra, Bohr atom, Heisenburg uncertainty principle	12
4	H	1/27	Development of Quantum Mechanics – Schrodinger equation, Ψ , Ψ^2 , quantum numbers	12
5	T	2/1	Electronic Configurations of Atoms and Ions	12
6	H	2/3	Periodic Trends – effective nuclear charge, atomic and ionic radii	12
7	T	2/8	Periodic trends - Ionization energy, electron affinity, electronegativity, filled and half-filled shell stability	12, 13
	W	2/9	Exam 1	
8	H	2/10	Chemical bonds: ionic vs covalent, dot structures of atoms and ions	13
9	T	2/15	Ionic bonding	13
10	H	2/17	Covalent bonding: dot structures	13
11	T	2/22	Covalent bonding: structures of expanded octets and larger molecules, Introduction to valence bond and VSEPR theories	13, 14
12	H	2/24	VB and VSEPR Theory	13, 14
13	T	3/1	VB and VSEPR Theory, Introduction to molecular orbital theory	13, 14
14	H	3/3	Molecular Orbital Theory	14
15	T	3/8	Gas laws: Boyle's, Charle's, Avogadro's	5
	W	3/9	Exam 2	
16	H	3/10	Ideal gas law, effusion and diffusion of gases	5
		3/15, 3/17	Spring Break	
17	T	3/22	Real gases	5
18	H	3/24	Intermolecular Forces *Last date I am available to sign drop forms is the end of office hours this day. (Hopefully you won't need this!)	16
19	T	3/29	Properties of liquids, Introduction to thermodynamics (terms, heating curves)	16, 9, 16.10 (heating curves)
20	H	3/31	Thermo (heat capacity, thermal equilibrium)	9

21	T	4/5	Thermo (work, enthalpy)	9
	W	4/6	Exam 3	
22	H	4/7	Thermo (calorimetry)	9
23	T	4/12	Thermo (Hess's law, heats of formation, bond energies)	9
23	H	4/14	Thermo (bond energies)	9, 13.8
24	T	4/19	Entropy	10
25	T	4/21	Entropy	10
26	H	4/26	Free Energy	10
27	H	4/28	Free Energy	10
28	T	5/3	Thermo wrap-up	9, 10
	W	5/4	Exam 4	
29	H	5/5	Demo Day!	
	Sat	5/14	Final Exam 2 to 5 pm	