CHEMISTRY CH301 Pre-Requisites

To remain enrolled in CH301 you must meet one of the following MATH pre-requisites:

1. Be currently enrolled in one of the following courses: **SSC302, M305G, or calculus (one of the M408x courses)**

OR

2. Have credit for one of the above math courses from a previous semester, AP, IB, or dual-credit course.

What you need to know

· Hundreds of students are currently enrolled in UT Austin math courses for which they do not meet the ALEKS-math pre-requisite. As such they will be dropped on Wed AM (9/1) from their math course.

· If you are dropped from your math course, you will no longer meet the Chemistry pre-requisite and subsequently will be dropped from CH301 on Friday (9/3)

CH 301 Random Musings August 31, 2010
(this is a really long one, the others are much shorter)

1. Why, you ask, do I spend my one might a week writing Random Musings? I do it because I know how much you want to keep up with the goings on in class and don't really want to send me non-stop redundant e-mails. So before you go asking me a question because you haven't been to class or paid attention to the Random Musings, you would do well to read them. You don't want to have me look at you after you ask your question and have me ask, "Have you read the musings?' That way we can save our conversations for questions about chemistry.

2. As you will learn, I don't care that much for adults and animals, but I do like kids, and I have a bunch of them myself (six), including, Andrew, who just celebrated his second birthday, which means I will be in my late 60s before I can even hope he will be self sufficient and I will be free to do as I please. In the picture you can see the current wife, four kids, and the results of Austin's greatest snowstorm in the last quarter century—literally a quarter inch at the higher elevations.

3. Electronic Text Book. I choose to use an electronic text book that the vast majority of you now own for the year. Associated with the e-book is something called a ChemPortal for class management and within it a DynamicBook. Over the next couple of weeks I will roll out various features of the book including for example:

- Practice quizzes and problems for you to work in the portal.
- Communication with you through e-mail, blogs and chat functions.
- A modified textbook in which will be imbedded video of me talking about the material or a TA work a problem in the text (coming September 13th).

4. Buy your portal NOW. I need to the entire class to purchase the portal as soon as possible so that I can feel comfortable that I am effectively communication with you. I can't make you purchase it, but I also can't be responsible if you don't get the e-mails or practice quizzes and exams or worksheets……

5. Course notes—On Thursday the NSC will be selling my course packet, tax free, as a one-time fundraiser for student scholarships. The 450 pages of material include the syllabus, my 25 typed lectures, high school review materials, the twelve 2009 worksheets, and all of last year's quizzes and exams, with answer keys. The cost of the course packet is a tax free $25 (it would

sell for about $50 with tax at the copy centers so this is a good deal). If you intend to buy the notes, please have cash or a check ready after class. The NSC will conduct a quick and orderly sale and everyone should have their notes by 3:30. By the way, proceeds from selling these notes will go to 10 $1000 scholarships for UT students to be awarded this spring.

6. Mistakes. Now something you need to understand about your instructors at UT. Being professors we are deeply flawed on many levels (which is why we never get real jobs and instead continue to hang out on college campuses until we die.) Anyway, you are about to receive 450 pages of notes and support materials that I produced, mostly in the dead of night. And you will also start receiving tons of new material in the way of worksheets and practice tests. If you think there aren't a million mistakes, you are sadly mistaken. How could I possibly make mistakes?

- I have fat fingers and can't fit them on keyboards easily
- Even if they could fit, I don't know how to type anyway
- I have fat fingers and can't fit them on calculators easily
- I don't pay really close attention to stuff like freshman chemistry problems

And most important:

- I don't care.

And by "I don't care" I mean that I am simply incapable of checking my working—it runs contrary to my very being and has already kept me out of medical school so I am not going to change just for you. For example, do you think I read over the 6 pages of typing for these musings looking for mistakes? No.

What this means, then, is that by all means you should e-mail me with mistakes you find and I will do my best to correct them. It is easily the most important thing you can do to help the class. And in the meantime, don't waste time wondering why you can't get the answer we got, when the reason is that you are right and we are wrong.

8. Reviewing for this course. The vast majority of you passed your ALEKS Chemistry and are in great shape to begin the course. Good for you. But be aware that if you need to brush up on your high school chemistry, there are several places to go, including the four lectures I have posted in the notes as well as the Chemistry remediation web site.

http://chemprep.cm.utexas.edu/

Remember that I will not be discussing high school chemistry concepts in lecture, but that doesn't mean that you can't ask about them in discussion sessions and office hours.

9. I am a great believer in actually studying to do well. Many people like to study in groups or at least around a TA or professor to get help. Doing so around people who can help explain things would also be a good idea, so I provide about 20 different times to choose from each

week to study in a formal environment. Because you are in college and I think you should do what you want, these sessions are optional. Come, don't come, it is up to you. But I find that setting aside a couple of these times to attend on a regular basis is a very nice idea. Here are the times available for you to choose.

http://laude.cm.utexas.edu/courses/ch301/sessionsf10.html

10. To help you discern the different study environments:

- Office hours are intimate sessions that typically just a few people attend. They are held in office environments and provide a free for all for questions you have. Some times the questions stray away from strictly chemistry to other topics where you can benefit form the advice of the TA or professor.

- Discussion sessions are hour long problem solving sessions held in classrooms. More people come and we end to focus on completing the worksheets although you can ask questions about any part of the course material. We make sure that extra copies of the worksheets are available at the sessions.

- Academic Communities. Starting next TONIGHT, and every Sunday through Thursday evening in the Jester and Kinsolving residence hall dining areas, you can join study groups that form to study for my course. The TAs have also kindly agreed to make the rounds of these study sessions five nights a week following dinner with the peer assistants and a discussion session. Study groups for other introductory science and math courses will also form in the dining halls.

11. Academic Communities start tonight!! Who is going to Travis' discussion section and academic community in Kinsolving?

12. I mentioned that I am looking for students to serve as peer assistants in the Academic Communities. About 90 of you indicated an interest in the 40 positions we have available. The TAs are in the process of forming these peer teaching teams and will be in touch with you about whether you have been selected. If you commit to the program, you are expected to put in one night a week for about two hours working with study groups on the worksheets. If you aren't selected, please don't look at this as your first failure in college—this isn't like rushing a sorority or something. In truth you are all peer educators—the only difference is that you don't have to eat dinner with the TAs if you aren't chosen.

13. Exam conflicts. Many of you have a conflict between my Wednesday evening exams and exams or labs in other courses. In principle you are to read the header notes for a course before deciding whether it fits your schedule, but given the limited course availability for freshmen, your faculty will work hard to find alternatives. So don't worry, we will make sure you can take your exams and complete your labs.

And now we can start learning.

14. Weekly worksheets. The first thing you need to do is to start studying for this class. While other classes use the HW Service to generate problem sets, I prefer to give in class quizzes (people seem to have to learn a lot better that way) and instead, provide weekly worksheets. You should have received an e-mail with a link to the first two worksheets this weekend. These worksheets do a thorough job of covering the concepts and the problem types that will be tested. Not only that, they suggest additional problems you might work However they are for instructional purposes only, and are not graded. Do them, don't do them, I don't care. Just get all your questions right on the exam and we will both be happy.

15. Worksheet 0 and 1 have been posted in the Portal (though I also e-mailed it to you) and include some practice on math without a calculator and some questions from the first three days of lecture. Worksheet 2 will be posted this weekend. It will cover quantum rules and electronic configurations. In fact, every Sunday you will see a new worksheet posted to my web site.

16. Here is the layout of lectures, worksheets and quizzes for the first two weeks of class:

T	8/31	EMR, Wave Particle Duality	Lecture 1	Worksheet 0, 1
H	9/2	Development of Quantum Mechanics	Lecture 2	
T	9/7	The Origin of Atomic Orbitals	Lecture 3	Worksheet 2
H	9/9	Electronic Configurations	Lecture 4	Quiz 1

(I should point out that Chapter 1 is the most conceptually challenging of the chapters--Chapters 2 through 5 are a walk in the park compared to it. So don't get too down if you struggle to understand the material in the first chapter. I can assure you the questions you will be asked to work on the quizzes and exam will be a lot easier than the actual text material.)

17. I love to tell people the kinds of questions that they need to study for a quiz or exam. So Thursday, September 9th, there will be a 40 point quiz with 8 multiple choice questions on the following topics Problem types for the quiz:

- EMR energy ranking/calculation
- theory behind failure of classical physics
- wave/particle duality calculation
- uncertainty principle calculation
- particle in a box concepts
- Schrodinger equations concepts
- boundary conditions for quantum rules
- Aufbau, Hund and Pauli

18. A few things to remember about quizzes:

- I always tell you what the topic areas for the quizzes and exams will be.
- There are no make-ups (you get to drop your lowest two quizzes.)
- Quizzes are taken the last 20 minutes of class.
- I provide all necessary equations, conversions, constants, and periodic table. All you need to bring is a pencil and a calculator.
- I don't give quizzes to people who show up for class an hour late just to take the quiz—don't wander up asking for a scantron that was handed out at the beginning of class.
- If you need extended test taking or quiet conditions, you need to let me know.

19. Poetry corner. For the culturally disinclined or impaired, once a week we read a poem or two aloud in class. Would you like to volunteer a favorite? If you don't you'll be hearing a lot of angry white male poetry like this one:

I walked outside early Saturday morning and smelled death—actually, some of you (the two who were awake) probably smelled the same thing and thought it smelled like sweater weather and got all excited. But not me. I smell the first hint of crisp air and go into a prolonged funk. Then I went out and cleaned the garage because otherwise I would have curled up in a ball on the couch until spring,

Anyway, that is why I have pulled out the poem below by one of my favorite poets, Gerard Manley Hopkins. He was a reformed Anglican, living at the end of the 19th century, who became a Catholic priest and then just started hanging out writing depressing poetry to reflect the fact that he was depressed his entire life. He refused to let anyone publish his poetry. After he died, it was published to the delight of early 20th century poets whom some of you think are the really cool people, like Dylan Thomas. Hard to believe they found this man to be their inspiration—yet he gave us something really profound in the way of alliteration and sprung rhythm--he made his poetry feel like what he was describing on a really visceral level (though not so much in the example below.)

Here is one of the only fairly accessible poems he wrote, about the relationship between the seasons and death. I hate the fall, it smells like death.

Spring and Fall: To a Young Child

Márgarét, are you gríeving
Over Goldengrove unleaving?
Leáves, líke the things of man, you
With your fresh thoughts care for, can you?
Ah! !ás the heart grows older
It will come to such sights colder
By and by, nor spare a sigh
Though worlds of wanwood leafmeal lie;
And yet you wíll weep and know why.
Now no matter, child, the name:
Sórrow's spríngs áre the same.
Nor mouth had, no nor mind, expressed
What heart heard of, ghost guessed:
It ís the blight man was born for,
It is Margaret you mourn for.

Gerard Manley Hopkins