CH302 Random Musings April 5, 2007

1. I have decided to kill the question with the diprotic acid titration—it was poorly constructed for two reasons, the absence of a grid made the assignment of the 35 ml mark iffy and the phrase "after adding" is ambiguous because you could apply the work "after" with different, legitimate contexts. So I am directing Mazen to kill the problem.

2. Many of you will say, "but I got that one right, it isn't fair……" But understand, I do not kill problems because people do poorly on them. I kill problems only if they are poorly constructed and would deny someone who otherwise knew the material the opportunity to get it right. For example, I did not kill the two questions that less than 40% of you correctly answered because those two problems were fair and people missed them because they don't fully understand polyprotic acid calculations, which is a fair reason to miss a problem.

3. By the way, fell free to let me know if you ever find any question "unfair." I would be happy to evaluate it and make a decision.

4. On to good news. The exam 2 score was an average of 73 with the distribution is found below. Some of you might wonder why I would consider this to be good news since it is the lowest overall score of the year, but it is easily the highest average I have ever had for the second CH302 exam—equilibrium questions just scream, "I have a million ways for you to get me wrong." For example, last year's class had an average of 63 for similar material on a slightly easier test. So again, congratulations.

5. The grade distribution is shown below with color codes to approximate grade cutoffs—recognize how many variables figure into whether these scores reflect anything about your final course grade.:

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30 to  40   | 22
40 to  50   | 22222
50 to  60   | 22
60 to  70   | 2222222
70 to  80   | 222222222
80 to  90   | 2222222
90 to 100   | 222222222222222222
100 to 110  | 222222222222222222
110 to 120  | 222222
120 to 130  | 22222222222222222222222222222
130 to 140  | 22222222222222222222222222222
140 to 150  | 222222222222222222
150 to 160  | 22222222222222222222222222222222222222222
160 to 170  | 222222222222222222222222222
170 to 180  | 2222222222
180 to 190  | 22222
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6. A reminder—do not e-mail about regarding issues—turn a regrade request form in to Mazen before or after class—the forms are downloadable from my web site.

7. And of course this is where I remind you to never give up. Many of you came to see me in preparing for the second exam after struggling on the first—some did much better. Some are still getting used to how to do well on this kind of exam. But you have to keep after it. All it takes is getting everything under control and in your head for just one glorious 3 hour period during the final exam in May, and you can have you're a as well.

8. We are on to Kinetics so as we start, here is an example of kinetics from my own life involving kinetics:

Dave figures out how to save hundreds of dollars on potatoes using kinetics.

I shop at WalMart for groceries because they are so darn cheap. Consequently I end up being able to buy a 10 pound bag of potatoes for the cost of a 5 pound bag elsewhere. The problem is that I don't like making mashed potatoes every night of the week, so the potatoes end up sitting around. Before I know if, they have grown those nasty tentacles, which are so disgusting I end up throwing the potatoes away. Like clockwork, every second week, boom, five pounds of tentacled left-over potatoes tossed—I might as well be shopping at Randalls. Then one day I remembered my kinetics and how maybe all that stuff about rates of reactions of chemicals applied to potatoes as well. I stuck a bag of potatoes in the refrigerator in the garage, and have kept it there for 3 months—no tentacles at all. The only problem is that they are in the garage so I forget I have them and the rate of eating mashed potatoes has gone way down as storage time has soared.

The data:

Day	tentacle length (78^oF)	tentacle length (35^oF)
1	0	0
2	0	0
3	0	0
4	0	0
5	2mm	0
6	3mm	0
7	5mm	0
8	7 mm	0

Rate of tentacle growth between days 7 and 8:

35^oC: 0 mm per day = (0-0)/(8-7)

78^oC: 2 mm per day = (7-5)/(8-7)

9. A bit of advice on what makes electrochemistry and kinetics challenging. In a word: vocabulary. Unlike acid base equilibrium where I spent the entire time teaching you how to reduce the problems to simple common forms like A^- or BH^+, the material in the next few chapters is very broadly covered and involves material that will be unfamiliar even to people who had a lot of chemistry in high school. (The truth is that if there are two chapters that no chemistry teacher wants to teach, they are electrochemistry and kinetics—the stuff is hard and few have really good backgrounds because no one really ever taught them, kind of self-perpetuating.) Anyway, when it comes to vocabulary, consider trying to distinguish the following phrases:

- Rate
- Rate expression
- Rate Constant
- Differential Rate Law
- Integrated Rate Law
- Method of Initial Rates
- Rate Determining Step

If you can't explain EXACTLY how each of these is defined, you can't solve kinetics problems.

10. Extra Credit assignments and your course grade. No, I don't curve. But as mentioned, I will be offering three extra credit opportunities in this class, each worth 1% of your grade. This is what I do rather than "curving" because I am sure that no one in here wants to get a grade they haven't earned. Given that I have three different grading schemes, you may want a more quantitative understanding of what turning in an extra credit does to your potential grade. The table below shows the consequence—the cutoffs for point totals for every grade cutoff, including exemption, are lowered by one percent for every extra credit you turn in. Here is a handy table to use as your guide for new grade cutoffs. Understand this table only applies to those students who turn in three extra credits—you can do the math for the cutoffs if you turn in only one or two extra credits. 3% of the grading, etc.

Dr. Laude's new grade cutoffs (assuming you turn in all three extra credits.)

	Exemption scale (700 max)		Cumulative scale (1000 max)		Final Exam scale (300 max)	
Grade	old cutoff	new cutoff	old cutoff	new cutoff	old cutoff	new cutoff
A	**630**	**609**	**900**	**870**	**270**	**261**
B			**800**	**770**	**240**	**231**
C			**700**	**670**	**210**	**201**
D			**600**	**570**	**180**	**171**

11. Details on earning your 3 extra credit. Procedures for turning in extra credits all follow the extra credit process used for Extra Credit 1--you must follow these in order to get the points--please don't make my life difficult by not doing what you are told.

Procedure:

- Complete the extra credit task below.
- Write it up (probably 100 words or so, but write as much as you want to tell the story.)
- Submit it as plain text in the body of the e-mail (no attachments!!)
- Send it to dalaude@mail.utexas.edu by the deadline
- Jump for joy at having earned 1% of your course grade

Extra Credit Assignment 1:
• Title: **Spring break extra credit** with your uteid appended (If you do not use this subject you will not be filtered into the file from which I assign extra credit.)
• Due Date: Monday April 2 at 3 am.
Instructions. During spring break I want you to teach a science-hater something interesting about chemistry that you have learned in this class. To get the points, the person you teach has to say to you, "gee, I had no idea chemistry was that interesting" when you have finished (you can make them say it even if they don't mean it.). You can choose what you teach but I would recommend that it be something of interest and utility, like the complications of cooking at high altitude if you happen to be skiing at spring break or why fish explode if you happen to be at the beach, or why South Park was wrong or the value of adding salt to water to boil your pasta or why you shouldn't add pure antifreeze to your car or why water balls up on windshields or how neutral water isn't always pH 7 and on and on. It is your choice.

Extra Credit Assignment 2:
• Title: **Undergraduate Research** with your uteid appended (If you do not use this subject you will not be filtered into the file from which I assign extra credit.)
• Due Date: Monday, April 30 at 3 am
Instructions. Go to the undergraduate poster session on Friday, April 20th, some time between 11 and 3 pm in the Welch Foyer (right outside this classroom.)
For details, see: http://cns.utexas.edu/students/ohris/research/
Find a poster you like, talk to the person standing in front of it for 5 minutes, and then going home and email me about your experience. Spend a few sentences telling me who did the poster, why you liked the poster and how neat it is to see that students your own age are doing world class research that you could also be doing with a little initiative. For those of you who can't go to the poster session, an alternative bonus opportunity is to walk through a science building on campus on the upper floors, staring at the walls. You will see scads of research posters that are up for your perusal. Just take a look at one of those and email me with the same instructions as above except include the name of the first author on the poster.

Extra Credit Assignment 3:
• Title: **Scholarly lecture** with your uteid appended (If you do not use this subject you will not be filtered into the file from which I assign extra credit.)
• Due Date: Friday, May 4 at 3 am.
Instructions. This campus is littered with seminars of a scholarly nature that occur in addition to the normal course lectures that are given. Every department will hold literally hundreds of these a year. You will see signs for these posted everywhere. For example, while walking to a help session last week in Geological Sciences, the first four doors I passed, had descriptions of four entirely separate events that were holding multiple scholarly lectures. Typically these talks are about 50 minutes in length with a question answer period and occur in the late afternoon. They occur non-stop, year round, and should become part of your academic experience as you evolve into an intellectual force on campus. Some of you questioned might ask whether concerts or plays might be considered, or whether the presentation has to be about science. My response is that you must establish a relevance to your academic interests. So if you are a pre-med history major I can see going to a talk about breast cancer cures or why Rome fell, but I am not sure you can justify the ballet. But really, I leave it to you to make the justification as part of your explanation of the experience.

A couple of scholarly lectures to consider (more details to come):

- A stem cell symposium will be held next Friday, the 13th and will feature debates on the stem cell controversy.
- Oral presentations by undergraduates at the Research Forum on the 20th that would count.

12. There is no way in the world that we will collect all 1500 extra credits without something getting messed up. PLEASE PLEASE PLEASE do not treat this as life and death. I guarantee that we will provide a mechanism for

you to check whether you received credit and to rectify any errors before grades are assigned. But sending me panicked e-mails asking if you got credit is not the way to do it.

13. University Health Services trains & supervises UT students to serve as peer educators in the areas of Sexual Health, Alcohol & Drug Education, and Nutrition. They are recruiting now for the fall 2007 training class for all three programs. You can earn academic credit--up to 5 credit hours--for volunteer work (Sexual Health & Alcohol & Drug Education only); secure an excellent source for letters of recommendation; enhance resumes by demonstrating an attitude of community service; have fun interacting with like-minded people in a small group setting; help fellow Longhorns be safer & smarter when it comes to sexual behavior, alcohol & drug use, and nutrition. For more information and to apply, visit:
http://healthyhorns.utexas.edu/education/peereducation.html.
Click "Peer Educator Application," complete the Online Application, and submit. If you would rather, you may pick up a paper application in SSB 1.106, the UHS Health Promotion Resource Center. Applicants will interview with program coordinators in April. Application deadline has been extended to April 11, 2007.

14. Poetry Corner. Two poems, one from a classmate that might resonate with some of you, and one from Gerard Manley Hopkins.

My comment on the follow poem is simply this, yes, everything will be alright.

That's Student Life

In my crazy student life
As my world goes under,
I hear a song.
"Is it all in my head?
Could everything be alright without me knowing?"
I think, could it be?
That this song is sung for me?

The skies are dark.
The sidewalks flooded

"Is it all in my head?"

Thunder.

"Is it all in my head?"

Lightning.

"Could everything be alright without me knowing?"

I'm lost.
Books, papers, printouts, projects.
Midterm, midterm, midterm, final.
Out of paper, out of ink, out of energy.
Exhausted, I'm overcome by sleep.

In my coma nap I feel,
Thunder.
Lightning.
"Is it all in my head?
Could everything be alright with out me knowing?"

As I wake early next morning
I see, fresh sidewalks,
A sunny sky.
And dark clouds on the horizon.
It's not in my head
But everything will be alright,
At least to my knowing.

Finally,

Written below is one of the most famously challenging poems ever written, and one that is particularly appropriate this time of year (Easter), is by my favorite poet, Gerard Manley Hopkins. This guy gave us sprung rhythm, alliteration, and just a really neat way of making the words in the poem sound like what he is describing. People write entire books on this one poem. I still vividly remember the all-nighter during which I had to write a paper on this poem. It really hurt my brain.

The Windhover

I CAUGHT this morning morning's minion, king-
dom of daylight's dauphin, dapple-dawn-drawn Falcon, in his riding
Of the rolling level underneath him steady air, and striding
High there, how he rung upon the rein of a wimpling wing
In his ecstasy! then off, off forth on swing,
As a skate's heel sweeps smooth on a bow-bend: the hurl and gliding
Rebuffed the big wind. My heart in hiding
Stirred for a bird, -- the achieve of; the mastery of the thing!
Brute beauty and valour and act, oh, air, pride, plume, here
Buckle! AND the fire that breaks from thee then, a billion
Times told lovelier, more dangerous, O my chevalier!
No wonder of it: shéer plód makes plough down sillion
Shine, and blue-bleak embers, ah my dear,
Fall, gall themselves, and gash gold-vermillion.

- Gerard Manley Hopkins (1845-1889)
Composed in 1877, Published in 1918