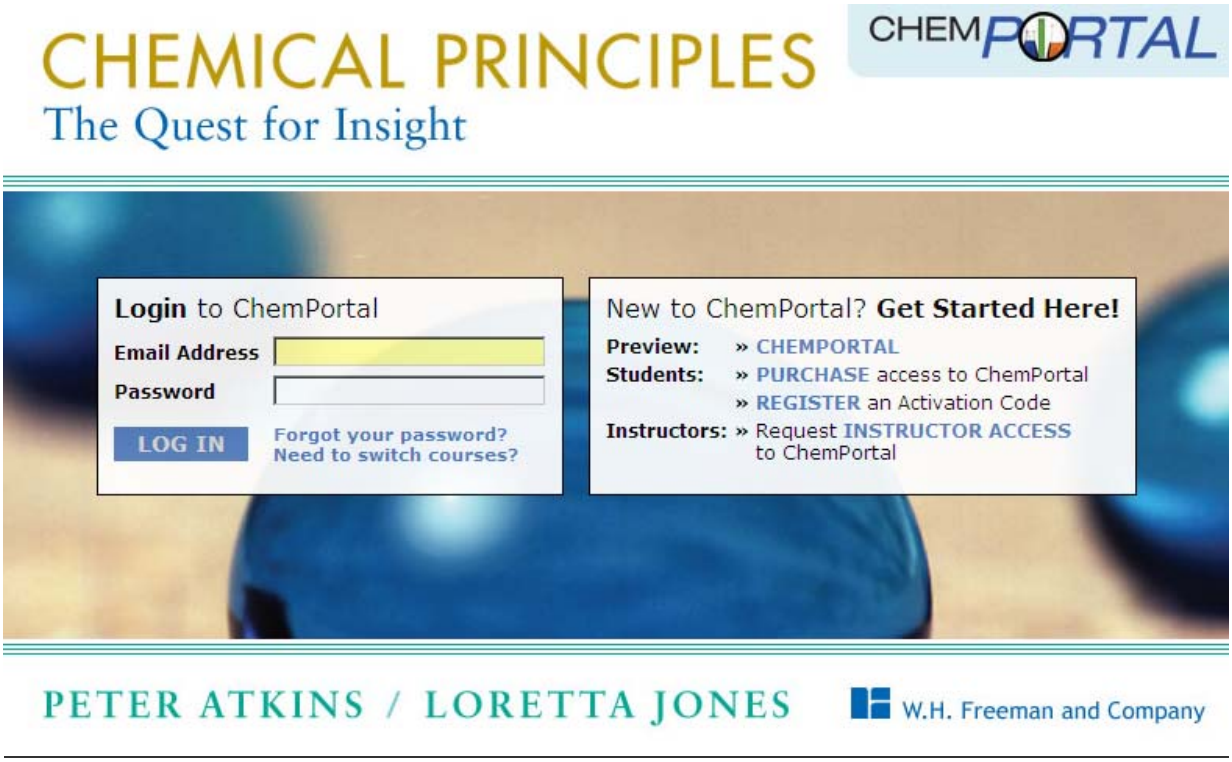
Accessing Your ChemPortal Course

Accompanying Chemical Principles, Fifth Edition by Peter Atkins and Loretta Jones

W.H. FREEMAN & COMPANY

Go to **http://courses.bfwpub.com/chemprin** **(Mac users need Firefox)**

If you already purchased the full year access, you are good to go. Just log in.



TO PURCHASE YOUR ACCESS CODE:

1. Click on **"PURCHASE access to ChemPortal"**
2. Select "TX" from the State Drop-Down list
3. Select "University of Texas at Austin" from the Institution Drop-Down list
4. Select your instructor's name from the Instructor Drop Down List and Click NEXT
5. Select a subscription, either for six months or one year.
5. Create your account by filling in your name and email address.
6. Create a password. Your password must be at least 4 characters long and should be something you will easily remember, since you will need it to access student materials in the future
7. Click NEXT and fill in your credit card information.
8. You will receive confirmation of your purchase and can begin using ChemPortal!
9. Make sure you open the link to "General Chemistry" to be at the correct course site.

Need help? Contact technical support at 1-800-936-6899 or email techsupport@bfwpub.com.

Spring 2010 Professor Laude
CH 302
INFORMATION PACKET

COMING TO SEE YOUR PROFESSOR

I know that I am a professor and a dean and older and that all of that may make me seem intimidating. But actually I am very nice to children and students (I am only so-so with small animals). Please do not be afraid to contact me about your academic or non-academic problems with this course. The last thing you need is to end up with a bad grade for this course when there is something that could have been done about it if you had contacted me in time. So just send me an e-mail and I will tell you how easy it is to schedule a private discussion with me.

CH302: A CAPSULE SUMMARY

Course name and number: CH 302: Principles of Chemistry I, Unique number 52455
Class meeting time and location: TTh 2 to 3:15 p.m. in WEL 2.224
Instructor information:

Instructor name	Professor David Laude
Office location	W. C. Hogg 2.222A (W.C. Hogg is between Welch Hall and the Tower)
Office phone	471-6176 (You'll get my assistant Judy)
e-mail	dalaude@mail.utexas.edu
Office hours	Monday through Thursday (see times below) or e-mail for an appointment

Teaching assistant information:

name	*e-mail*	*Principal duty*	*Office hour*	*room*
Travis Johnson	ubertravis@gmail.com	The Man	Tues and Thurs 3:30-5 pm	Cubicles
Miranda Colletta	mcolletta@mail.utexas.edu	exams and quizzes	Wednesday 3 to 4 pm	Cubicles
Jessica Lawshe	jelawshe@gmail.com	exams and quizzes	Monday 11 am to 12n	Cubicles
Devin Matthews	dmatthews@mail.utexas.edu	exams and quizzes	Wednesday 2 to 3 pm	Cubicles
Tiffany Chen	icouldbetiffany@gmail.com	exams and quizzes	Thursdays 5 to 6 pm	Cubicles

Where to go for information:

location	*information provided*
General chemistry office, WEL 2.212	course registration, lost and found, make-up exams
Web: http://courses.cm.utexas.edu/dlaude/	grades, answer key, course notes, handouts

Where to go for help (choose a couple of these to do every week):

day and time	*location*	*activity*	*presider*
Sunday 6:00 to 6:30 pm	Jester Dining	Peer/Peer dinner with TA	Devin
Sunday 6:30 to 7:30 pm	Jester A121A	Discussion section	Devin
Sunday 7:30 to 9:30 pm	Jester dining	Academic community	Devin
Monday 11 am to 12n	Welch first floor cubicles	Office hour	Jessica
Monday 2 to 3 pm	WCH 2.222 or WEL 2.308	Discussion section	Dr. Laude
Monday 6:30 to 7:00 pm	Kinsolving dining	Peer/Peer dinner with TA	Miranda
Monday 7:00 to 8:00 pm.	LLB 103	Discussion section	Miranda
Monday 8:00 to 10:00 pm	Kinsolving dining	Academic community	Miranda
Tuesday noon to 1 pm	WCH 2.222 or JGB 2.324	Discussion section	Dr. Laude
Tuesday 3:30 to 5 pm	Welch first floor cubicles	Office hour-grading	Travis
Tuesday 6:30 to 7 pm	Kinsolving dining	Peer/Peer dinner with TA	Travis
Tuesday 7 to 8 pm	LLB 103	Discussion section	Travis
Tuesday 8 to 10 pm	Kinsolving dining	Academic community	Travis
Wednesday 1 to 2 pm	WCH 2.222 or UTC 3.110	Discussion section	Dr. Laude
Wednesday 2 to 3 pm	Welch first floor cubicles	Office hour	Devin
Wednesday 3 to 4 pm	Welch first floor cubicles	Office hour	Miranda
Wednesday 6:00 to 6:30 pm.	Jester dining	Peer/Peer dinner with TA	Jessica
Wednesday 6:30 to 7:30 pm.	Jester A305A	Discussion section	Jessica
Wednesday 7:30 to 9:30 pm	Jester dining	Academic community	Jessica
Thursday 10 to 11 am	WCH 2.222 or FAC 21	Discussion section	Dr. Laude
Thursday 3:30 to 5 pm	Welch first floor cubicles	Office hour	Travis
Thursday 6:00 to 6:30 pm	Jester Dining	Peer/Peer dinner with TA	Tiffany
Thursday 6:30 to 7:30 pm	Jester A121A	Discussion section	Tiffany
Thursday 7:30 to 9:30 pm	Jester dining	Academic community	Tiffany

CH302 COURSE OUTLINE

Lecture	Day	Date	Topic	Lecture number Worksheet number	Quizzes and Exams
Physical and Chemical Equilibria, Intro to Aqueous Equilibria					
1	T	1/19	Physical Equilibria—Vapor Pressure	L1 and W1, W1a	
2	H	1/21	Phases and Phase Transitions	L2 and W2	
3	T	1/26	Solubility	L3	
4	H	1/28	Colligative Properties, Binary Mixtures	L4 and W3	
5	T	2/2	Reactions at Equilibrium, Mass Action Law	L5,6 and W4	Quiz 1
6	H	2/4	Equilbrium and Stress, Van't Hoff Equation	L6,7	
7	T	2/9	Aqueous Equilibria: Water autoprotolysis	L8 and W5	
8	H	2/11	Aqueous Equilibria: Solubility	L9 and W8	
9	T	2/16	Aqueous Equilibria: Monoprotic acids and bases	L10,11 and W6	Quiz 2
Complex Aqueous Equilibria and Electrochemistry					
10	H	2/18	Buffers Systems and Neutralization	L12 and W7	
11	T	2/23	Titrations	L13	
	H	2/25	Overview of material on for Exam 1		
	H	2/25	Exam 1 from 7:30 till 9 pm		Lectures 1 - 9
12	T	3/2	A stepwise approach to pH calculations	L14	
13	H	3/4	Solving Complex Equilibria: Dilute Species	L15	
14	T	3/9	Polyprotic Acids	L16	Quiz 3
15	H	3/11	Balancing Redox Reactions	L17 and W9	
16	T	3/23	Electrochemical Cell Convention and Famous Batteries	L17	
17	H	3/25	Standard Cell Potentials	L17 and W10	Quiz 4
18	T	3/30	More advanced electrochemistry calculations	L18	
	H	4/1	Famous batteries and an overview of exam material	L24	
	H	4/1	Exam 2 from 7:30 till 9 pm		Lectures 10 - 18
Kinetics, inorganic chemistry and organic chemistry					
19	T	4/6	Reaction rates	L19 and W11	
20	H	4/8	Differential and Integrated Rate Laws	L20,21 and W12	
21	T	4/13	Kinetic Theory	L22	
22	H	4/15	Reaction Mechanisms and Famous catalysts	L22,23	Quiz 5
23	T	4/20	Famous Examples of Group I-IV Chemistry	L25 and W14	
24	H	4/22	Famous Examples of Group V-VIII Chemistry	L25 and W15	
25	T	4/27	Organic Chemistry-Hydrocarbons	L 26 and W13	Quiz 6
26	H	4/29	Organic Chemistry-Functional Groups	L 26	
27	T	5/4	Polymers and Biopolymers	L 27	
	H	5/6	Overview of material on Exam 3		
	H	5/6	Exam 3 from 7:30 till 9 pm		Lectures 19-27

Grading Policy for CH302

Let me make it clear that I view grading as a necessary evil. Personally I'd like to believe you are all here because you can't wait to learn chemistry. Then, after a semester of good solid effort on everyone's part, we'd shake hands and go our separate ways. Maybe a few years from now, you could take some cut-throat exam to see if you knew enough chemistry to go to medical school, and you'd smile as you paused between questions to reminisce about good ol' Dr. Laude: "Gee", you'd think, "I wonder if he's still alive..."

But this isn't the world we've made and consequently I have to have a grading procedure for this class. Here is the general policy:

The grades for the course will be determined by the following rules:

1. Grading will be on a 1000 point scale. Letter grades will then be given on the basis of total points, using the following scale:

Various forms of A: 930 or more = A; 900 or more = A^-
Various forms of B: 870 or more = B^+; 830 or more = B; 800 or more = B^-
Various forms of C: 770 or more = C^+; 730 or more = C; 700 or more = C^-
Various forms of D: 670 or more = D^+; 630 or more = D; 600 or more = D^-
Various forms of F: 599 or below = F

2. You may earn your points in the following ways:

- You will take three 180 point in-class exams on new material worth a combined total of 540 points;
- You will take a final exam worth 300 points;
- You will take six 40-point quizzes (with the top four scores counting toward a 160 point quiz total.)

NOTE WELL: I give fair quizzes and exams and people who learn the material do very well on them—average grades are in the high 70s. Therefore, do not expect this scale to be lowered--in common terminology, there will be no curve!!!

Look on the next page to find a couple of options in the grading procedure just to spice things up a bit.

Tabulated summary of examinations times and maximum point scores:

Assignment	*Date*	*maximum points*
Exam 1 (Lectures 1 – 9)	Thursday evening, February 25	180
Exam 2 (Lectures 10 – 18)	Thursday evening, April 1	180
Exam 3 (Lectures 19 – 27)	Thursday evening, May 6	180
4 best scores out of 6 quizzes	fortnightly	160
Cumulative Final Exam (Lectures 1 – 27)	Saturday, May 15, 9:00–noon	300
Total course points		1000

**********More grading info on the next page**********

DETAILS OF THE INDIVIDUAL COMPONENTS OF THE GRADING PROCEDURE:

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.

QUIZZES. Quizzes emphasizing problem solving will be given six times during the semester. The quizzes will occur fortnightly 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.

HOMEWORK SETS, WORKSHEETS AND OLD EXAMS. Unlike some of the other CH302 courses, I do not have graded homework—I use in-class quizzes instead. However during the semester I will post on-line a variety of materials including weekly worksheets to assist in preparing for the quizzes and exams.

GRADING OPTIONS IF YOU DIDN'T CARE FOR THE APPROACH DESCRIBED ABOVE:

And now, grading options, because life would be boring if we didn't have the opportunity for a few extra challenges.

OPTION 1 FOR THE HOPELESS OPTIMIST. 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 or A- for the course even if your cumulative course average is below 90%. If you score 80% or above on the final, you get some form of 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.

OPTION 2 FOR THE STUDENT WHO KNOWS TOO MUCH TO BE IN HERE ANYWAY. 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. Each year about 25 to 30% of the class achieves this goal.

MAKE-UP EXAM AND QUIZ PROCEDURE

I will offer make-up exams and quizzes only under the following circumstances:

1. You are away from UT as part of a UT-sponsored activity including athletics and UT-sponsored organizations. Check with me if you are uncertain whether your absence qualifies.

2. The quiz or exam is in conflict with a religious observance—notify me by the 12th class day of the conflict.

3. You have a conflicting class, lab or examination time.

4. You suffer from a chronic, documented non-academic illness or emergency that results in your missing multiple exams and quizzes. Under these circumstances you should contact me as soon as possible to discuss a course of action.

If you do miss an exam or quiz for any reason other than the four described above, you cannot take a make-up. However you won't be penalized either. The following grading procedure will be implemented for missed quizzes and exams:

- Your lowest two quiz grades are dropped, so whether you are ill or believe that Spring Break should last a solid month, I will only count your highest four scores. Bad scores and missed quizzes for good excuses all mean the same to me, they all count toward the two quizzes you can drop.

- If you miss an exam during the semester, it will be replaced by the equivalent percentage of your score on the final exam applied to the 180-point exam scale. For example, if you miss exam two and get a 66% on the final exam, then you will have a score of 120 points (out of 180) inserted for the your exam 2 grade. Note: this substitution will only be allowed for a single exam. There is no need to inform me of your absence. This will happen automatically.

REGISTERING WITH QUEST TO ACCESS YOUR GRADES

The course management system we use to give exams and quizzes is Quest. No doubt you will find yourself using it for other entry level math and science courses as well. If you would like to learn more, go to the link below and enter your uteid. You should automatically see the courses you enroll in that use Quest. If you don't, wait a few days. There is no reason to go there until after your first quiz—from then on it is where you find out your exam and quiz results. The nice thing is that you typically will find out how you did within just a few minutes after you finish.

http://quest.cns.utexas.edu/student/courses/list

RANDOM MUSINGS

Once a week I will generate my Random Musings—think of them as an updated syllabus. This is the way I keep you up to date on all the details for class administration. It is also the way I perform a poetry corner for the culturally challenged. The musings are posted on the Web site should you miss class or need to look something up. Please read your musings before asking questions I went over with you in class.

A CALENDAR BROUGHT TO YOU BY THE LOWER DIVISION OFFICES

date	significance
Tuesday, January 19	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 22	Last day of Official Add/Drop and Late Registration period. Last day to add electronically.
Wednesday, February 3	Twelfth Class Day. Official enrollment count is taken. Last day to drop a course for possible refund.
Monday, February 15	Last day to drop a course without possible academic penalty. (Q drop deadline). In my class I am extending this period by a few days to March 2 so that you can evaluate your results from the first exam.
Monday, March 29	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 7	Last day of classes.
Monday, Tuesday, May 10,11	No class days.
Saturday, May 15, 9:00 am – noon	Final exam for CH302.

PREREQUISITES FOR CH302

To enroll in this class you must have received a grade of C or better for CH301 (whether earned through the UT course, transfer credit or placement credit.) You must also have passed calculus or be enrolled in calculus. If you do not meet these requirements the general chemistry office will drop you from the class on the 4th class day. E-mail me if you think there might be complications that need to be cleared up.

Q DROPS

I am extending the Q-drop deadline in my class and will rubber stamp a Q drop through February 23. After March 2, I will assign a Q only if you are: **actually passing the course with a grade of C or better** or have **a substantiated non-academic reason**. In other words, I will be doing my job according to the rules. If you have friends who are able to extract a Q drop after March 2 in another course even with failing grades, that is between your friend and his or her professor.

ELECTRONIC WORLD OF CH302: WEB PAGES

I know longer believe in paper and consequently make everything I do for the course available on the web. Specifically, you will need to go to web sites to find:

- Lecture notes, worksheets and musings
- The text book web site
- Videos of my lectures
- The grading website
- Course communication options

What this means, then, is that you simply have to book mark my course materials and be ready to reference them constantly. The many urls you should use are

My web pages:	http://laude.cm.utexas.edu/courses/
Textbook web site:	http://courses.bfwpub.com/chemprin.php
Quest website:	https://quest.cns.utexas.edu/student/courses/list
Lecture video website:	http://web4.cns.utexas.edu/lectures/

In an effort to simplify all of this, I have captured all of these sites and created a home page on the textbook web site. If you prefer, you can go to http://courses.bfwpub.com/chemprin and link to the other sites easily from there.

ELECTRONIC LECTURE NOTES

It pains me to watch students copying furiously during a time they should be trying to understand the material, so I will make my lecture notes from class, typed and organized, available for you to purchase cheap or download from the web.

VIDEOS OF DR. LAUDE'S LECTURES

There are cameras in the room recording my every move so that a video of each of my lectures can be made available to the class. This will be handy for those of you who have to miss a class or want to revisit a difficult concept that I have eloquently explained. I guess it is also a way to take the course without ever leaving your bedroom. To access the lectures, go to

http://web4.cns.utexas.edu/lectures/

and click on my course. I will give a brief demo in class of how to use the site after the first lecture is recorded.

E-MAIL

There are many ways to communicate with Dr. Laude and the TAs when you have routine questions about course administration and grades. The one that makes us happiest is electronic mail. That way we have a hard copy of our communication. It also frees up office hours for weightier matters. Best of all, we promise a 24 hour turn-around time for your messages. Oh, one thing we do not do by e-mail is answer complicated science questions better suited for the chalk board during any of a dozen help sessions and office hours each week.

Please use a little common sense about when to e-mail us.

To contact Dr. Laude, use the following address: **dalaude@mail.utexas.edu**
To contact Travis Johnson, use the following address: **ubertravis@gmail.com**
To contact Devin Matthews, use the following address: **dmatthews@mail.utexas.edu**
To contact Jessica Lawshe, use the following address: **jelawshe@gmail.com**
To contact Miranda Colletta, use the following address: **mcolletta@mail.utexas.edu**
To contact Tiffany Chen, use the following address: **icouldbetiffany@gmail.com**

SOME TIPS ON E-MAIL ETIQUETTE

Sorry, I can't take it anymore and have to start sounding like your father. You may have noticed there are now two ways of saying the same thing in an e-mail. Note the first form is used in presumptuously cool TV commercials from people trying to sell you small electronic gadgets.

l man :::?"gimme 5 pt ec @@#?::"))(:HC

I know you have your own way of doing e-mail and I am unlikely to change it, but understand that there is a difference between using IM or text messaging with your bffs (I don't know what this means, I hope it won't get me fired, but Travis thinks this adds an edge of irony) and e-mailing your professor with a request. In my old-fashioned opinion, e-mail is no different than a letter, a phone call or an office visit. Each of these forms of communication includes:

- a salutation with appropriate title (for example, I am Professor Laude or Dr. Laude—I am not Mr. Laude or dave or hey loudman:::/) or undeserving of any greeting at all.
- a decent stab at identifying who you are (including your uteid if it is something to do with grades in the class) so that when I e-mail you back I can include my own correct salutation
- a succinct but thorough description of why you e-mailed me.

Also desired but non-essential courtesies include:

- A friendly farewell (like "Have a good weekend" or "Thank you")
- Punctuation reflecting the possibility you were educated in a school system.

Using these suggestions, an e-mail to me might look like this:

> Professor Laude,
> I am e-mailing to request an appointment time with you to discuss some non-academic concerns that are making it difficult to ace your exams.
> Thanks for the opportunity,
> Harold Carmichael
> hc1234

Now I don't particularly care if you want to ignore my suggestions, but there will come a day when your lack of attention to these courtesies will have an undesired consequence, like ignoring your e-mail.

TEXTBOOK AND SUPPLEMENTAL MATERIALS FOR CH301

Text: Welcome to a brave new world of electronic textbooks—I am using Atkins Jones 5th edition electronic, found at http://courses.bfwpub.com/chemprin. E-books are cheaper, don't weigh anything, don't kill trees, and the bolded or colorful stuff on the pages actually turns into a video or a link to a useful web site rather than being a text book just wishing it was a web site. Congratulations. To find out how to purchase the e-book, please use the handout at the front of the syllabus my CH301 web site. Purchase price is $93.95 for a full year but $65.95 for six months. You need to have a credit card ready. A neat feature of the e-book it that it is my personal text book to annotate on line, personalizing it for the entire class.

Course Packet: If you are going to buy one supplement for the course, it makes sense that you buy the one your professor makes. My course packet includes all of the lecture notes, typed up neatly, all of last year's exams and quizzes, all this year's worksheets with answer keys, a nice review of high school chemistry, plus the syllabus. Much of this you could find on the web, but what a hassle. You can purchase this nice little package for about $30 (tax free and half the price the for-profit copy centers would charge) as part of a fundraiser for scholarships for students. There will be a one-time sale of this packet on Thursday, January 21st.

REGRADE PROCEDURE

To request a regrade, send an e-mail to Travis the does the following:

1. Include the words "Regrade Request Laude" in the subject heading.
2. Make sure you provide adequate information in the body of the e-mail including the unique number of the course, your name, eid, the exact assignment (e.g. make up exam 1 if it was the first make up exam), version number and a clear concise summary of the concern.
3. There will be a two-week limit with respect to regrades on quizzes. So if you do not submit a regrade request to Travis by e-mail within two weeks of the quiz date, you get the grade that is recorded.

STUDENTS WITH DISABILITIES

The Services for Students with Disabilities (SSD) office of the Student Dean's Office is charged with assisting disabled students. They estimate that about 2000 students suffer from disabilities including mobility impairments, learning disabilities, visual impairments, hearing impairments, ADD and ADHD, and others. By law, all of these students are guaranteed a learning environment that provides reasonable accommodation of their disability. As an instructor I am required to provide reasonable accommodation for students with disabilities and I am happy to do so. However it is your responsibility to inform me at the beginning of the semester (by the 12th class day) if you have a disability. I must know this information as soon as possible so that I can make appropriate arrangements.

RELIGIOUS OBSERVANCES AND MAKE-UP EXAMS

It is a University policy that a student may make-up work missed due to observance of a religious holiday. Please notify me by the 12th class day to insure that you can make up the exam—a make up exam will be provided to those who request it.

ACADEMIC COMMUNITIES STUDY GROUPS.

I have arranged for the class to form study group tables four nights a week in the residence hall dining rooms as part of the CNS Academic Communities. The way it works is that there will be TA and peer-to-peer supported study groups on Sunday through Wednesday evenings in the two dining halls. Each of these study group sessions is preceded by a discussion session where you can pick up a copy of worksheets and get questions answered by the TAs.

day and time	*location*	*activity*	*usual presider*
Sunday 6:30 to 7:30 pm.	Jester A121A	Discussion section	Devin
Sunday 7:30 to 9:30 pm	Jester Dining Hall	Academic community	Devin
Monday 7 to 8 pm	LLB 103	Discussion section	Miranda
Monday 8 to 10 pm	Kinsolving dining hall	Academic community	Miranda
Tuesday 7 to 8 pm	LLB 103	Discussion section	Travis
Tuesday 8 to 10 pm	Kinsolving dining	Academic community	Travis
Wednesday 6:30 to 7:30 pm.	Jester A305A	Discussion section	Jessica
Wednesday 7:30 to 9:30 pm	Jester Dining Hall	Academic community	Jessica
Thursday 6:30 to 7:30 pm.	Jester A305A	Discussion section	Tiffany
Thursday 7:30 to 9:30 pm	Jester Dining Hall	Academic community	Tiffany

THE SUCCESSFUL NATURAL SCIENCES STUDENT IN FOUR EASY LESSONS

LESSON 1 A FABLE: THE ACTIVE LEARNER AND THE PASSIVE LEARNER

Amazonia the Passive Learner. Amazonia has never missed a lecture. Amazonia goes to two discussion sections a week. Amazonia reads and rereads the chapters in the text. Amazonia has hired a tutor. Amazonia has worked and reworked all of the questions from last year's exams one hundred times. On the day of the test I ask Amazonia if he can name the seven strong acids. He only knows three. Amazonia gets a 65 on the exam.

Giuseppe the Active Learner. Giuseppe sleeps until 4 each day and has never come to lecture. Giuseppe never bought the text book. On the day before the test Giuseppe gets on the web and finds out what the 30 questions are on the exam. One of them is to name the strong acids. Giuseppe memorizes all seven acids. She also stays up all night and learns how to answer the other 29 questions. On the day of the test I ask Giuseppe if she can name the seven strong acids. She does. Giuseppe gets a 92 on the exam.

The Moral of the Story. The moral is not that you should skip class and stay up all night before the test. The moral is that you have to be able to prove to yourself that you are learning the material that is on the exam. How you do it I don't care. But be aware that there is no guarantee that being a good little boy or girl will get you an A like it did in high school. Learn the material and I will give you an A. Don't and I will be happy to console you before explaining what it means to be an active learner.

LESSON 2--YOU'VE GOT TO KNOW WHAT YOU DON'T KNOW

The wisest thing I ever heard a student say. A young women was asked by an incoming freshman what it took to be successful at UT. She replied, "you have to know what you don't know." Imagine sitting down by yourself just before an exam and seeing how much stuff about the test you can actually write down, or say out loud, with nothing in your possession but your brain. After all, on the exam that giant back pack of material and that computer and those friends you studied with you will be of no help at all. Don't fool yourself that just because you studied hard (whatever that means), that you are prepared for the exam.

Moral of the Story? The only way you can know for certain that you will do well on the exam is if you can isolate yourself from your learning environment and really assess what you know, and what you don't know. In that quiet time, if you can spend an hour explaining to yourself what will be on the exam, and you never have to hesitate, or can always find vocabulary (other than :the word "thingy") to express yourself, then you will do fine on the exam. And if you can't? You are just kidding yourself that you are prepared. Oh, and if you don't want to know the truth, and you walk into the exam having never really queried yourself about what you know and don't know, you are simply gambling with your grade.

LESSON 3--ACHIEVING PERFECTION IS HOW YOU EARN AN A IN COLLEGE

High school was great. You glanced over the material on the study guide for a 20 question test, and then you took the exam. You "kind of" or "sort of" knew the material. And your teacher was just thankful you were coming to class and weren't a jerk. So when it came time to grade the exam, even though you actually only got 10 questions right, for the 10 questions you got wrong, you "almost" got them right and with four points of partial credit on each question, you received your A for the test and a ticket to UT. Congratulations.

College is not so great. It seems like half your exams are multiple-choice. And after studying for your 20- question exam, you "kind of" or "sort of" know the material. Oh, this time your professor doesn't care if you studied enough. She just wants to know that you learned it. So you take a multiple choice test and get 10 questions right, and for ten other questions, that you "kind of" or "sort of" know, you find a really good answer that happens to be almost right. For all that effort spent almost learning, you get a zero on the question, an F for the test, and a conversation with your parents about alternate career choices. Welcome to college.

Moral of the story? You need to tweak that calibration curve on what it means to know what you know. College demands a lot more.

LESSON 4--THERE ARE DOZENS OF RESOURCES FOR LEANING THE MATERIAL—FIND THE RIGHT ONES FOR YOU

You will want to identify an efficient and effective approach to getting an A in a course. Understand that learning to study successfully at the college level is an ongoing effort and that if you find yourself performing poorly, then this is an indication that you need to change—it is up to you to figure out which approaches works best and constantly be refining your strategies for learning. Listed below are examples of the many resources typically available for the science and math courses you will take a UT. Mix and match them to come up with what makes you a successful student.

Lecture. From a testing perspective, the most important thing about going to class is **finding out what you are expected to learn to get a good grade** (and that is the reason you should always go to class.) It is a perk if the professor is also a dazzling lecturer who can really teach you something you will remember during a 50 or 75 minute time period. So just because you come to class daily and then nod off, or day dream, or act like a stenographer copying off the board, doesn't mean you have helped yourself at all in preparation for an exam. In many ways, the lecture is the least important thing you will do in terms of active learning.

Lectures on Demand. Increasingly faculty are posting their lectures on line for you to download and watch. This can become a more effective way to view lectures than the real-time version since you will be able to pick and choose exactly what you need to hear. For my course you can find the videos at http://cns.utexas.edu/cns_lectures/

Lecture Notes. Regardless of whether you go to class, someone has created some really good course notes. Maybe it is the professor. Maybe it is a classmate. Maybe it is you who was a really good stenographer. Whoever did the work, get a hold of these notes and to the best of your ability, know them thoroughly—don't just look at them, KNOW THEM. As a test, put them away and see how well you can recreate them from memory. After all, they are what the professor thought was important and they will be 99% of any exam.

Discussion sections, office hours, study groups. Everyone needs a secondary learning environment where they can go to have questions answered and, in general, engage in intellectual discussion about the subject matter. Make sure you provide yourself this opportunity by finding yourself a discussion section, office hour or study group each week that fits your schedule and going every week By the way, there is no more wasted time than time spent in a discussion section or study group unprepared, so go in knowing what it is you want to learn and ready to be an active learner.

Residential Hall Study Groups. Study group tables form five nights a week in the residence hall dining rooms as part of the CNS Academic Communities. For more information on how to use these communities to help you with all of your math and science classes, places check out the Academic Communities website: http://cns.utexas.edu/community/resident-hall-study-groups

Worksheets and problem sets. Most every science or math course provides students with supplemental problems and worksheets to help you master the material. Of course you should do these problems, but appreciate that working them with a friend, or with an answer key, really reduces the likelihood you will be able to do the problems by yourself on an exam. Don't fool yourself by reworking the same problems multiple times!!

Textbooks. Your textbook provides an eloquent description of the course material—actually wayyyy too eloquent of a description. Understand two things about textbooks: they always have more material in them than your instructor wants you to know and there are a dozens of other textbooks in the library that you might find to be a better learning resource. Don't be afraid to use a different book.

Textbook problems. There are plenty of problems in textbooks to work. Since these questions approximate the content and difficulty of exam questions (albeit in a different format), they are a useful way to study and test your knowledge, but unless actually assigned by the professor, they might not approximate what you will be asked to learn for an exam.

Textbook support materials. You can purchase supplemental materials with most every textbook, such as answer keys and textbook outlines and study guides. You can also use the CDs provided with the text to engage you in computer-assisted exercises to test whether you have learned the material. However unless you are independently wealthy I rarely see the reason to make these purchases when you have the internet available to do the same thing.

Internet. Type any topic area you want into a search engine and you will retrieve about 4.6 million web sites that are constructed to assist with your education. One site to absolutely book mark is the one associated with your text book. In most cases it offers an array of materials from outlines to sample problems to multimedia downloads that can be more useful and easier to navigate than the text itself. And if you find another site on the web that teaches you better, bookmark it as well.

Write your own problems. Be an active learner. If you can learn to write your own questions, then you will really know that you have learned the material. It is actually not that hard once you put yourself in the position of thinking about what should go into a question. This is the number one way you will know that you know the material.

A thought on tutoring. Some people think they can buy a grade. So they shell out $60 an hour to observe someone else prove they know the material. You've already heard your professor give a lecture on the subject that is a lot better than the tutor, and you can go (for free) to scores of discussion sections and study groups. So the only real reason to pay a tutor is to have someone act like your mom or dad and force you to sit in your room and study. So pay your roommate $10 an hour to do the same and save.

So should you use all of these resources? Of course not. So which should you use? The ones that get you an A the faster and cheapest. Which ones are those? How do I know? Everyone is different—figure out what works for you and do it. But always be ready to change because just about the time you figure out how to ace one course, you will have another course that requires a different form of studying to be successful.