CH 204 – Introduction to Chemical Practice
Fall 2012

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OFFICE HOURS: Tuesday, Wednesday, Thursday 9:30 - 10:30AM

COURSE WEB PAGE (Blackboard): http://courses.utexas.edu/
The course web site has announcements and useful information. It also contains a TA schedule of office hours. Although you will have a Blackboard link for your lab section, the course materials will be posted under the **CH204 Master Class Fall 2012**. Your individual TA will communicate with you through your section link. To enter Blackboard, use the URL above, enter you EID and password.

Posted on Blackboard under the course documents link:

1. The course syllabus
2. The course calendar (this has all information regarding lectures, quizzes, post-lab assignments and lab reports).
3. Iclicker instructions for taking lecture quizzes.
4. Supplemental materials (information supplemental to the lab manual that may be beneficial in helping lab write-ups and preparation for lecture quizzes).
5. Lecture PowerPoint slides (the lecture slides will be posted on Blackboard at the end of each week).
6. LabQuest Manual (you will use the LabQuest hand held devices to measure temperature and pH throughout the semester).
7. Dr. Lyon and TA office hours.
8. Instructions and password for downloading LoggerPro Software for data analysis.

Please be sure your e-mail address is correct on Blackboard. If your e-mail address is not correct, please contact the Blackboard help desk for assistance in correcting it. It is through Blackboard e-mail that your TA and Dr. Lyon communicates with you. If you do not receive an e-mail from your TA after the first week of labs, you need to check your e-mail address in Blackboard.

QUEST HOMEWORK SYSTEM: http://quest.cns.utexas.edu/student/
The Quest homework system will be used to administer and submit answers for post-lab assignments. All quizzes will be taken through Quest. The course grades for all assignments will also be available on this Website. To access this course in Quest:

1. Enter your UT EID
2. Make sure your browser is supported (read the help topics for information concerning your browser if you are unable to register in Quest for this course)
3. When you view "My Courses", if you don't see any courses listed, click "Enroll in new course".
    a. Use the course unique number for your lab section and enter this when prompted. Dr. Lyon will be notified that you want to register, and you will see a status message indicating that your enrollment is pending.
4. Viewing and submitting your assignment.

a. Choose ***My Courses*** to view your course listings, and then choose a course to see the assignments associated with that course.
b. Click on an individual assignment to see the problems and the radial buttons in which you are able to submit your answers. Post-lab assignments have many different variations, so your assignment will be different from other students in your class. All assignments have due dates and cannot be reactivated once the due date has passed. The answers for the post-lab assignments will be available after the due date has passed for all lab sections.

5. Located at the top of the assignments page is a toolbar with a" help" link.
   a. Under "help" there are several links to information regarding browser support, numbers (how to enter scientific notation), number of answer submissions allowed for questions on post-lab assignments, how negative points are determined and how to register an iclicker for your course. **READ THIS INFORMATION!**

NOTE: This course makes use of the web-based Quest content delivery and homework server system maintained by the College of Natural Sciences at The University of Texas at Austin. This homework service will require a $25 charge per student for its use, which goes toward the maintenance and operation of the resource. Please go to http://quest.cns.utexas.edu to log in to the Quest system for this class. At some point during the second or third week, when you log into Quest, you will be asked to pay via credit card on a secure payment site. You have the option to wait up to 15 days to pay while still continuing to use Quest for your assignments. If you are taking more than one course using Quest, you will not be charged more than $50/semester. For payment questions, email quest.fees@cns.utexas.edu.

PREREQUISITE**:** Students registered for this course must have taken CH301 or equivalent and CH302 or equivalent or must be enrolled in CH302 concurrently with CH204.

Students, enrolled in CH302, who decide to drop CH302 before or on the final drop date without possible academic penalty, must also drop CH204. The concepts associated with many of the lab procedures during the second half of the semester are covered in the second semester of general chemistry. If you have not remained in CH302 long enough to learn these concepts, you will not have the knowledge to understand these later laboratories and you will be lost and perform poorly on the remaining lab reports and lecture quizzes.

TEACHING ASSISTANTS AND TA OFFICE HOURS: **There are twenty TAs for this course and their office hours will be posted on Blackboard.**

STOREROOM: Eric Wigdahl (WEL 5.131) It is necessary that you submit all late reports to this storeroom.

UNDERGRADUATE CHEMISTRY OFFICE: WEL 2.212 **Phone:** (512) 471-1567, (512) 471- 4983
Address all questions regarding registration, add/drop, etc. to this office.

IMPORTANT DATES DURING THE SPRING SEMESTER:

CH204 labs begin during the week of September 10- 13. Students will attend the lecture and the laboratory for the first time during this week. Each student should bring a combination lock to the lab for this first meeting in order to check into their lab equipment drawers.

Friday, September 14, Twelfth class day; the official enrollment count is taken. This is the last day to add a class.
Tuesday, November 6, this is the last day an undergraduate student may drop a class for urgent nonacademic reasons.

November 19-23, Thanksgiving Holiday, there are no lectures or labs this week.

November 26 – 29, is the last week of lectures and labs. Students will check out of lab during this week.

December 3 – 6, the last lab report and post-lab is due.

REQUIRED COURSE MATERIALS AND SUPPLIES

1. The laboratory manual for this course, *CH204 Fall 2012 Lab Manual,* is sold exclusively in the Duplicating Office in WEL 2.228. Each semester the lab experiments are changed therefore, you must buy the lab manual for the fall 2012 semester. The lab manual is needed for the first meeting of labs during the week of September 10- 13.

2. A bound laboratory notebook with duplicate numbered pages (also sold at the Duplicating Office in WEL 2.228, at the ACS affiliate group's desk or at the Co-op). Please buy the top bound notebook with 50-pages, not the spiral notebook. ***Ask for the CH204 lab notebook – it is not spiral bound.*** The lab notebook is needed for the first meeting of labs during the week of September 10- 13. If you already purchased the spiral notebook, then you may use it during lab this semester, however, you paid more than you needed to spend for a lab notebook and there will probably be many unused pages remaining at the end of the semester.

3. iClicker2: (Please be sure to purchase the newer iClicker 2, not the older version.) This is a radio frequency classroom response system. The clickers will be used to collect quiz responses during lecture. **You should bring your iclicker to every lecture**. There are more than one remote available for purchase. Please be sure you buy the **iClicker2**, which is generally less costly than the other available remotes. **You must register your iClicker2 in Quest, not the iClicker Website, to receive quiz scores.** If your iclicker is registered in Quest for another chemistry course then you are also registered for this course. (Complete instructions for registering your iClicker are in this syllabus, posted on Blackboard and are also available on the Quest toolbar (help) at the top of "My Courses" page. The iclicker can be purchased at the Co-op. You should bring your iClicker to the second lecture meeting (September 17- 20).

4. Combination lock (also sold at the Duplicating Office in WEL 2.228 and in the storeroom WEL 5.131, or any hardware or office supply store). The lock is needed for lab check-in on (September 10-13).

5. Scientific calculator (programmable or nonprogrammable are acceptable). The scientific calculator is needed by the second meeting of labs on (September 17- 20).

6. USB drive for collecting data. Buy the USB drive with the smallest GB (4-6 GB). USB's with large GB of memory do not work well in the LabQuest data collection instruments. You will need your USB drive starting with experiment 1 (September 17- 20).

7. Logger Pro 3 Software to analyze lab data. This software will be provided to you as a free download from the Vernier Website on September 10. At the beginning of the semester, a URL link and a password will be sent to students through Blackboard e-mail that will allow students to access and download the Logger Pro 3 Software into a personal computer. The software will also be available on a computer in each lab. The LabQuest experimental data collected by USB will be imported into the Logger Pro software for graphing, analysis and printing. Data collected by other means than the LabQuest will also be analyzed and printed from Logger Pro.

WHAT TO EXPECT IN THIS CLASS:

This is a hands-on course designed to teach you a variety of laboratory skills, including the proper use and handling of glassware, the techniques and processes common to many scientific labs, and standard methods for recording observations and data. The course consists of a weekly one-hour lecture followed by a four-hour lab. Most labs will not require all four hours, but there are a couple of labs that will require almost the entire lab period.

Expect that most lab reports will take several hours to complete. Please do not wait to write your lab report until it is too late to access a TA and/or Dr. Lyon for help. **(We will not be available during the weekends, we have lives as well.)**

TEACHING ASSISTANTS (TA)

The lab sections are taught by graduate teaching assistants. Your TA will meet with you during the first lab to provide you with safety information and to supervise the check in procedure for lab equipment drawers. In addition, your TA will stipulate his or her specific guidelines for performing the lab procedures and for lab clean-up. Although the policies regarding the lab report are given below, your TA may have specific preferences for how information is completed in your lab report write-ups and this information will be specified at this initial meeting. Each TA has complete authority over his or her lab section and the lab report scores; therefore, it is important that you pay attention to what your TA has to say.

The TA's are provided with comprehensive grading keys that include point deduction for all lab reports. Although, there will be small variations from one TA to another with regard to the exact point deductions that will be taken for calculations and discussion questions, the overall GPA of your section as compared to the other lab sections are monitored weekly.

LECTURES

The lectures each week will cover some of the theoretical background behind that week's experiment, and also provide practical tips for carrying out the experiment. They will often show sample calculations to help get you started on the write-up. You are encouraged to take notes during the lectures since some of the material covered will not be in the CH302 textbook or in the CH204 lab procedures. If you miss lecture, do not e-mail Dr. Lyon to request an overview of what you missed. It is your responsibility to find out what you missed from your peers. The lecture slides will be posted on Blackboard at the end of each week.

There will also be quizzes given at the end of every lecture, which will cover the previous week's material, so if you decide to work on your lab report in class instead of paying attention to the lecture, you may fail the quiz a week later.

The last lecture and lab occurs during the week of November 26 – 29. The last lab report will be due one week later, December 3-6, unless your TA has made arrangements with you to turn in your reports earlier. No late reports will be accepted after the last day of classes on Friday, December 7, 2012. The last post-lab will also be due the week of December 3-6.

QUIZZES – DROP ONE

Quizzes will typically have ten questions and you will have about 25 minutes to complete them. Your quiz answers will be submitted by the iClicker and immediately uploaded into Quest. All questions are ***allowed only one response***. The quizzes will cover the concepts related to the experiments you performed during the prior week in lab. Questions are drawn from the previous week's lecture, the background information preceding each procedure in the lab manual, post-lab problems, the experimental procedures and calculations required for the previous week's lab. There will be a total of 9 quizzes: there will be no quiz for experiment 10. At the end of the semester, the ***lowest quiz grade will be dropped*** and the remainder will count 25% of your grade.

The ***iclicker2*** will be used in this course for submitting answers to quiz questions. **Your iclicker must be registered in Quest (not the Iclicker Website)**. The process of registering is simple:

1. Enter Quest and select your CH204 unique number.
2. You are now on the assignments page. Select "My Profile" on the tool bar at the top of the assignments page.
3. Type your iclicker registration number in the box to the right and update. (There are no letters L or O in the iclicker registration number.)
    a. The iclicker registration number is located on the back and at the bottom of your iclicker. Note: If you cannot read your registration number, you may take it to WEL 2.212. The office staff in the Undergraduate office has software that is able to determine your iclicker registration number.
4. Return to the assignments page and write down your box number.
    a. Each student enrolled in CH204 is automatically assigned a box number in Quest. This number is located at the top left-hand corner of the assignments page – just above the list of assignments.
    b. To activate the box number, you must register your iclicker in 'my profile' as described above.
    c. You will need to know your box number in order to take a quiz; therefore, write it down and bring it to class. Your box number is not provided on the quiz hard copies, you need to know this information prior to taking a quiz.

When a quiz is administered in class, the Quest software will be launched by Dr. Lyon. At this point, a series of numbered boxes will appear on the projection screen. Every quiz is unique and has a version number code at the top. You must type the 5-letter code into your box number in order for you to have the correct quiz version graded (see Iclicker instructions below and on Blackboard). You will then enter codes for answers to specific quiz questions into your box number. The questions will be immediately graded once a student inputs an answer code and types enter.

USING THE ICLICKER TO TAKE LECTURE QUIZZES:

1. Locate your box number; you will see (V?) in the box, indicating that you need to type in your code to obtain your version number. The 5-letter code is located at the top of the quiz hard copy. E.g. **001/ABCCA – the 001 is the quiz version number and the ABCCA is the 5-letter code.**

2. Type in the 5-letter code. You must type slowly for each letter to appear in your box number.
3. Select enter (E) and the quiz version number should appear in your box (001 from above example will appear in your box if you typed ABCCA then Enter). If the version number is incorrect DO NOT select enter. Begin typing the 5-letter code again (the box only accepts five letters and you may type over what is already there). You may continue to the type until the correct 5-letter code appears in your box number. Once the correct version number appears in your box number, select enter (E).
4. The number 1 will appear in your box once you have activated the quiz for your version number. That number represents the question number.
5. The iclicker legend of codes for answer responses is available at the top of every quiz hard copy (see iclicker instructions on Blackboard). E.g., if you want to select answer 2 for question one, you will type (AB) into your box. The box will show two numbers once you have answered a question. The first number is the question number and the second number is your answer choice.
6. If you are certain that is the answer that you want, select (E) for enter. If the second number that appears in your box in not the answer choice you want to submit, then simply type the two-letter code again. The box only accepts two-letters once the quiz version number has been activated. You can continue to type over the letters until the correct two-letter code appears in your box number. You must select (E) to submit the answer.
7. Once a question answer is submitted, the box will turn blue if the question is correct or the box will turn red if the question is incorrect.
8. To move forward to the next question, type (CD) then (E). To move back one question, type (CC) then (E).
9. You are allowed to answer a quiz question only once. If you type an answer code into your box for a question that has already been submitted and graded, the box will turn a greenish-brown – indicating the question has been answered.
10. You cannot change an answer once it has been submitted. Dr. Lyon will not correct an answer in Quest because you were careless and did not type in the correct code. Do not hand in your quiz to be hand graded if you have submitted answers through iclicker. Regardless of the reasons, Dr. Lyon will not grade questions that already have answers submitted in Quest unless you have entered the wrong version number.
11. Note: For every lecture quiz there are one or two version numbers that will not activate. That is, you type in the 5-letter code and the correct version number appears but when you select enter, V? appears in your box number again. If this happens to you, simply raise your hand and we will provide you with another quiz version number.

<u>COMMON ERRORS MADE DURING LECTURE QUIZZES:</u>

1. Be sure to toggle through all of your submitted answers before you leave. One of the most common errors that students make on quizzes is that a question is left unanswered. If you take a couple of minutes before you leave to toggle through all ten questions to be sure you have submitted an answer for each question, you will not make this mistake. Use either CD and (E) or CC and (E) to toggle through the questions.
2. The number on the top of your quiz IS NOT your box number; it is your quiz version number. You may only find your box number in Quest.
3. You must select (E) enter to activate your quiz version (after the correct version number appears in your box), to submit answers and to move from one question to the other.

4. You must select (CD) then (E) enter to move forward to the next question or (CC) then (E) enter to move back one question. If you keep answering the same question over and over then you have not selected (CD) then (E).

It is imperative that you learn the process by which you enter answers by the iclicker; therefore, you should read the instructions covering the submission of iclicker answers carefully. These instructions are available above and more thoroughly on Blackboard under the "Course Documents" link in the "Course Information" folder. It is your responsibility to learn the steps to entering the quiz version number and submitting answers. There will be an iclicker legend at the top of all quizzes; therefore, it is not necessary to memorize the answer codes. If you accidentally enter the wrong code for an answer, then you will miss the question. Dr. Lyon does not change answers in Quest due to student carelessness. Dr. Lyon does not accept the premise that the iclicker entered the wrong code (the iclicker is an instrument that relays the information entered by the user; it does not have a mind of its own). Dr. Lyon also does not accept that Quest scores questions incorrectly.

Since most of the quizzes require calculations, you should bring a calculator to every lecture. Dr. Lyon does not supply calculators for students.

No make-up quizzes will be offered for students who miss class. If you miss a quiz for any reason, that will be the quiz that is dropped. You will receive a zero for any quiz that you have missed that exceeds the "one drop" limit.

Quiz scores are available at 5:00 PM on the day the quiz was taken in class.

1. The answer keys for the quiz will be activated and available at 8:00AM on the Monday following the week of the quiz. Please check your quiz scores as soon as possible after the scores are available.
2. Students who believe their quiz scores are incorrect must contact Dr. Lyon before the answer key is activated that following Monday.
3. Dr. Lyon must have the student's quiz hard copy with the student's name, EID, the day of the week that the student attends lecture and the answers circled before the answer key is activated on Monday.
4. You may leave your hard copy in the mail slot below Dr. Lyon's office number, outside WEL 5.234, if you are unable to see Dr. Lyon before the answer key is activated. E-mail Dr. Lyon to let her know the quiz has been left in the office slot.
5. Students who wait until the answer key is activated to inquire about a quiz score have waited too long to report the problem.

The most common reason that quiz scores are zero or very low is due to the version number entered incorrectly. Once the quiz answer key has been activated (the following Monday), the quiz can no longer be hand graded; therefore, no consideration will be given to quiz scores after the answer key is available. This does not apply to a bad question that needs to be removed from the quiz after the quiz is taken. A bad question on the quiz usually requires killing the question for all students. However, on occasion a bad question may only affect a few students who happened to receive the quiz version with the bad question; it can take a couple weeks to resolve the quiz scores for those students.

One hand graded quiz will be allowed during the semester. If you forget your iclicker or the batteries die in your iclicker or your iclicker stops working during a quiz or you type in the incorrect version number,

you must submit your hard copy quiz to Dr. Lyon or the head TA before you leave class. Dr. Lyon will not change answers already submitted into Quest by a student. The one hand graded option is only for students who have either entered an incorrect quiz version number, or are unable to submit answers due to dead batteries or non-functioning iclicker, or forgot to bring their iclicker to class, or have been given permission to take a quiz in another lecture section. If you hand in a quiz to be graded, it can take 24hr. to two weeks before Dr. Lyon has time to grade and manually enter your quiz score. Please do not e-mail Dr. Lyon regarding hand graded quiz scores unless two weeks have passed. All hand graded quizzes can be reclaimed during office hours once the score has been posted in Quest.

Keep your quiz hard copy if you do not require it to be hand graded. ***Do not discard any quiz hard copies***. On rare occasions, it may be necessary that you produce your quiz hard copy in order to receive credit for a quiz. If you come late to the quiz and you do not have time to enter your answers then you will receive zeros on the questions that you are unable to submit - no quiz will be hand graded for students who are late for a quiz. ***This is important***, if your iclicker fails during a quiz you may have the questions that were not submitted graded, however, you need to be sure that you have a functioning iclicker the following week. Changing the batteries does not always remedy the problem with an iclicker. Waiting until a quiz is given in lecture to find out that your iclicker is not working is unacceptable. If you change the batteries in your iclicker, go to WEL 2.212 and check to be sure the device is functioning. It is possible to borrow an iclicker from someone but you need to register that iclicker in Quest **before class** in order to receive credit for quiz answers. As long as you re-register the iclicker in Quest, you can change an iclicker. Dr. Lyon allows only one hand graded quiz, regardless of the reason you were unable to submit answers with your iclicker.

There are 40 lab sections this semester; ten sections each day, Monday –Thursday, five in the morning and five in the afternoon. All lab sections occurring on a particular day are compiled into one unique number on Quest for uploading iclicker quiz scores and for the convenience of entering scores by the TAs and Dr. Lyon. Therefore, if you are registered for a Monday lab, regardless of your unique number you will be registered in Quest under a one unique number, which represents all the students registered for the Monday morning and afternoon labs. Consequently, if you miss a lecture, you may not attend another lecture section and take a quiz with your iclicker. Quest will not recognize you because you are not registered for that lecture section. Thus, if you take a quiz in another lecture section you will receive a zero for the quiz and Dr. Lyon will not hand grade your quiz once the class is over. Under special circumstances Dr. Lyon will allow a student to take a quiz in another lecture section only if the student has contacted Dr. Lyon for permission to do so and if it is determined that the student has not had a hand graded quiz already. Oversleeping is not a special circumstance!

POST-LAB ASSIGNMENTS – NO DROPS

These assignments are available through the Quest homework system each week on the day of your lecture class. The assignments cover the concepts presented in the previous week's lecture, from the background information in your lab manual and from the lab's procedure. The post-lab assignment will be available at 8:00AM on the day of your lecture class and will be due one week later at 8:00AM on the day of your next lecture class. The first post-lab assignment will be available during the week of September 17 – 20. The first post-lab will be due one week later (see course calendar on Blackboard).

DO NOT wait until the last hour or two to submit answers to your post-lab questions. If the Web is not available during the last couple of hours before the assignment is due, which almost always happens during the semester, and you have not submitted any answers, you will receive a zero for the assignment.

It is also not advisable to wait until the last day to submit answers. If you become ill the day before the assignment is due and you have not submitted answers before the due time, you will receive a zero for the assignment. Once a post-lab assignment has passed the due day and time, the assignment is locked and students cannot submit answers; Dr. Lyon cannot override that function in Quest.

Post-lab assignments are an excellent study guide for the upcoming lecture quiz. Dr. Lyon carefully selects questions, particularly numerical questions, which represent the concepts that were covered in the previous lecture and lab. Having someone else provide you with answers to the questions has a two-fold penalty. First, it is academic dishonesty and secondly, if you do not know how to answer questions on the post-lab then you will certainly miss most of the questions on the lecture quiz.

Post-lab submissions will not be re-graded! These assignments are graded immediately by the system following a student's submissions. On these assignments, you will have the opportunity to submit an answer to a specific question more than once. HOWEVER, each subsequent answer submission will cause a deduction in points. More than three (3) answer submissions for a single question usually will result in negative points. **Please read the student instructions available through the Help link (located in the menu at the top of page) in Quest. Pay careful attention to the process of submitting answers, e.g. significant figures, scientific notation and the number of possible answers allowed for post-labs questions.** There will be nine post-lab assignments and none will be dropped at the end of the semester – it is necessary that students are evaluated for the concepts associated with all nine labs. Post-lab assignments are 5% of the course grade.

TA EVALUATION – ONE DROP

An evaluation score of 0 to 10 points each week will be assigned to you by your TA at the end of every laboratory period. This score is based on your TA's evaluation of your lab safety/technique, lab preparedness, appropriate dress, ability to work competently, and whether or not you clean up your lab space before you leave. One TA evaluation will be dropped. The TA evaluations are 10% of the course grade.

LABORATORY

The laboratory work is the backbone of the course, and accounts for 60% of your grade. Most of the experiments will be performed individually; but a couple will be performed in groups of two or three. Working in a team means you will collect the equivalent data as your partner or partners only. You must write your lab report by yourself. **Your data analysis, calculations and discussion must be yours alone.** You may not write a lab report as a team, any collaborative work on lab reports will be considered as scholastic dishonesty for all individuals involved and will be referred to the Student Judicial services in the Dean's Office.

Do not hesitate to ask Dr. Lyon or your TA whenever you have questions or are not sure how to perform certain tasks. A question can take a couple minutes, but a lab mistake can cost you two hours and a deduction in TA Evaluation points.

Be prepared for lab before you arrive. Complete any pre-lab calculations that are required prior to the lab procedure, complete the lab protocol (explained below) and the preliminary lab report. Make sure you understand the purpose of the experiment and are familiar with the procedure. If you slowly bumble your way through the experiment because you are unprepared, it will be obvious to your TA, who will be annoyed because you are wasting his or her time by showing up unprepared, and you will lose points.

LAB REPORTS – ONE DROP

Lab reports are comprised of two sections: ***Notebook Copy Pages and Written Discussion***. The notebook copy pages contain all the information that you recorded in your lab notebook before and after the labs are performed. The discussion will be typed written in paragraph form and uploaded electronically into SafeAssign in Blackboard by the beginning of your next lab (1PM or 5PM). A copy of your discussion will be attached to the back of your notebook copy pages. The lab report should be turned in to your TA at the beginning of your lab session the week after you perform the experiment. Always tear out the **COPY** pages from your notebook to turn in the lab report. Never tear out an original page for any reason. One lab report will be dropped at the end of the semester.

Read Carefully: Although one lab report score will be dropped at the end of the semester, it is to your advantage to complete all nine labs. If you do not attend a lab or turn in a particular lab report for any reason, you will receive a zero for that report and it will be dropped at the end of the semester. However, if later in the semester you miss a lab for a documented reason (illness, car accident, etc.); you will receive a zero for both absences; one will drop at the end of the semester and the other will be averaged in your overall lab report score for the course. You are not allowed to have an unexcused absence and an excused absence and have both labs dropped.

Under very special situations, a student may be allowed to miss two labs and have both labs dropped at the end of the semester. Those circumstances are rare and both of the absences must be documented by the Office of the Dean of Students. Students must provide documentation from the Office of the Dean of Students within two weeks following the missed experiment. Requests, on behalf of students, from the Dean's Office for extended time to turn in lab reports must be made within one week following the due date of the lab report. **We will not retroactively grade lab reports or add back late penalty points after the designated time intervals (given above) have lapsed. We will not accept late reports or recommendations from the Dean's Office after December 7th, regardless of the reasons given for the delayed documents.**

You may not miss more than one lab unless you have documentation by The Office of the Dean of Students proving you were unable to attend both of those labs. If you miss more than two labs or do not hand in more than two lab reports, you should withdraw from the course. You must complete seven labs and hand in seven lab reports in order to pass this course regardless of the reasons you had to miss more than two labs. Students who are not able to complete at least seven labs (even with documentation) will not receive credit for this course. It may be possible under extreme situations to receive an incomplete for the course, but the keep in mind that the labs will have to be completed during the next semester.

Summary: One lab report, one TA Evaluation, and one Quiz score is dropped from the assignments percentages that determine your final course grade. This policy is in place for students who must miss a lab experiment or lecture quiz or both due to circumstances beyond their control; such as, an injury, an illness, a religious holiday or a family crisis. As noted above, it is to your advantage to attend all labs and lectures in case an unexpected incident causes you to miss a lab.

LABORATORY NOTEBOOK

1. Use your lab notebook for the heading, protocol, data collection, observations, and data analysis. Everything you turn in for this course except the quizzes, post-labs and discussion will come from pages in your lab notebook.

a. Write using real English words and complete sentences.
b. **Always use ink in your notebook**. Use a pen that makes good carbonless copies.
c. **Place the protector sheet behind the carbonless page or you will copy through more than one page in your lab notebook**.

2. Never tear out original pages from your notebook. Always turn in the ***COPY*** pages.
    a. If you make a mistake, cross it out with a single line. If there is any unused space left on the page, cross it out with a single diagonal mark.
    b. Write neatly and legibly. If your TA can't read it, he or she will give you a zero -TA's have a large number of lab reports to grade every week and they can't waste time deciphering your illegible scrawl after you were told in no uncertain terms to write neatly and legibly.
3. At the top of EVERY page of your notebook write down your name, your TA's name, the date, and your section number (unique #).
4. Always start your laboratory report for every experiment on a new page.
5. At the end of your written notebook copy pages, write your unknowns when applicable. Be sure to label this part of your written report as "Unknown".
6. Your laboratory notebook must be signed by your TA before you leave lab. Some TAs require that all data is initialed.
7. There should be no missing pages in your lab notebook. In the past, there has been a student or two who complained that their lab notebook had missing pages before the notebook was purchased. It is your responsibility to be sure your lab notebook has all of the pages and failure to do so will cost you points on a lab report score. If you buy a used notebook with missing pages and there enough clean pages remaining (approximately 50) to complete nine lab reports with page numbering in numerical order, be sure to let your TA know that your notebook does not begin on page one.

WHAT YOU SHOULD DO BEFORE YOU COME TO LAB:

It is important that you prepare for each week's experiment in advance so that you don't waste time in lab or make costly mistakes:

1. Submit the **post-lab** answers for the previous lab on Quest by 8:00AM on the day of your lecture class.
2. On a new page in your notebook write:
    a. Your name
    b. Unique #
    c. TA's name
    d. The date and title of the experiment
    e. Objective of the experiment (written in your own words!)
3. Write a ***protocol*** that you will use to complete the experimental procedure.

You will be required to prepare a "cookbook" outline of the experimental procedure before you enter class. You should have a complete step-by-step outline of the procedure that you will use during the experimental process. This does not mean you should write the entire procedure from your lab experiment word for word, but rather, the procedure can be written in steps or as a flow chart. However you decide to write your protocol, it should contain enough information that you are able to perform the experiment without referring to the lab experiment in the lab manual. Be sure to complete the protocol for the correct lab procedure.

You will use this protocol to complete your lab procedure; the lab manual will not be allowed at your bench during the lab period. The protocol will be written in your lab notebook prior to the lab period and initialed by your TA at the beginning of each lab period. If you do not write a lab protocol, you will be allowed to complete the lab using your lab manual procedure, however, you will be accessed a **10 point penalty** on your lab report score for not having a protocol at the beginning of a lab period. We do not provide the experimental procedure to you; therefore, if you do not write a protocol, then you need to bring the lab manual with you to lab.

Writing a protocol is not a requirement in order to make your lab experience grueling but on the contrary, it is imposed in order to make your lab experience less difficult. The more you are prepared to perform the lab, the easier the lab experience will be. As you write the protocol, you may come across language or a procedure that is confusing or that you do not understand. Knowing this in advance will allow you time to seek help before the lab begins.

4. Complete the ***preliminary experimental write-up*** before coming to class. The preliminary experimental write-up is a head start on your lab report. It will save you time and you are less likely to make mistakes. Your preliminary experimental write-up should include: *(Your TA may have specific guidelines concerning how she or he wants the following to be entered in your lab notebook.)*
    a. The equations for chemical reactions that will be performed.
    b. The blank tables for data collections and blanks for recording any other data collected during the experimental process.
    c. The data tables are provided in the lab manual and need to be copied into your lab notebook before you come to lab. It is ***not necessary*** to copy graph examples provided in the manual into your lab notebook.
    d. If you are required to create your own tables, these should be written in your notebook prior to lab.
    e. Pre-lab calculations if required should be in your lab notebook before lab begins.

As you collect data in lab, write it directly into the tables in your lab notebook. *Do not* record data on scraps of paper towel, on your hands, or on disposable plastic weighing boats. At the end of the laboratory period, have your **TA SIGN YOUR DATA** collected during the lab session in your laboratory notebook. Do not leave the lab without your TA's signature in your lab notebook! If you do not have the TA's signature on the copy pages of your lab report, you will receive a zero for the report.

THE LAB REPORT

The written lab report is composed of two parts; the notebook copy pages portion and the written discussion portion. The lab report has a point value of 100 points.

1. The **notebook copy pages** portion of the lab report includes: (50 points)
    a. Name, date, experiment title, TA name, unique number on each page.
    b. The objectives of the experiment (written in your own words).
    c. Lab protocol – step by step procedure.
    d. Experimental write-up (Data and Calculations)
        i. All chemical equations for the chemical reactions that are carried out as part of that experiment.
        ii. Pre-lab calculations if required.

iii. Completed tables. (The data you entered during the experimental procedure into the copied tables in your lab notebook.)

e. All data collected during the experiment that was not entered into a table.
f. All observations made during the experiment. This information should be thorough.
g. All calculations must be shown with units and answered to the correct number of significant figures. (If you have repetitive calculations, e.g. density, you only need to write the calculation once for each type of measurement.)
h. Information used to identify an unknown - if applicable.
i. Identity of unknown (for labs 4, 5 and 8) – if applicable.
j. Graphs printed during the lab procedure should be attached to the back of the copy pages– if applicable.

2. The **written discussion** portion – A discussion will be written for each experiment. (50 points) The discussion also must be submitted in SafeAssign on Blackboard. In other words, you need to turn in a copy of your written discussion with your notebook copy pages ***and*** upload a copy in SafeAssign on Blackboard before you come to lab and before you turn in your lab report. **You cannot receive credit for your discussion if you have not submitted a copy of your discussion to SafeAssign.**
    a. The discussion part of your lab describes the objectives, results and conclusions of the lab experiment you just completed.
    b. It will be typed, 1.5-spaced and submitted electronically through ***SafeAssign*** in ***Blackboard*** before the beginning of the next lab period; by 9AM or 1PM. One copy of the discussion will also be printed and attached to the back of your lab report.

A late penalty of 10% (10 points) per day (excluding weekends and holidays) will be assessed for a late lab report. The lab report is late if it is not turned in by the beginning of the lab period. If you do not have an attached discussion, the lab report is not complete and will assessed the late penalty of 10 points per day until the discussion is made available to your TA. If any portion of your lab notebook copy pages or discussion is missing, the lab report is not complete and will be assessed the late penalty of 10 points per day. Please do not e-mail your TA and request that he or she print a copy of your discussion from Blackboard to complete your lab report; that is your responsibility not your TA's.

At the end of each lab procedure in the lab manual there are several questions and instructions that will guide you through the writing of your discussion. DO NOT write the questions or number your answers or paragraphs in your written discussion, but rather, be sure to include the answers to the questions, in paragraph form, as you write your discussion. When your TA instructor grades your submitted discussion, he or she will look to see if the discussion instructions were followed and the answers to the questions were addressed in your writing. Be sure that your answers to the questions include a logical discussion based on your observations, data collection and data results. A simple yes to any question is not acceptable. This part of the lab report determines your understanding of the concepts associated with the results of your experiment. Your writing will also be graded for misspellings and incomplete sentences (use spelling and grammar check). The value for each written discussion submitted is 50 points.

If you do not submit the correct document to the appropriated discussion link on Blackboard, you may ask your TA to remove it. Please do so before the due time lapses for the submission of the correct document.

Below are the guidelines for the Discussion that will be submitted on Blackboard.

a. Typed and 1.5 line-spaced.
b. No script or bold fonts can be used.
c. The font size cannot be larger than 11.
d. The font style must be regular; do not use bold or italic styles.
e. Set one-inch margins for all sides.
f. Do not use hyphens or apostrophes in the title page. SafeAssign will not upload discussions that include these forms of punctuation in the title page.
g. No more than a two-page discussion can be submitted unless otherwise indicated in the discussion portion in the lab manual. Number pages if more than one page is submitted.

Submitting Written Discussion to SafeAssign:

a. In Blackboard, select the CH204 link for your specific unique number.
b. Click on Assignments
c. Click on SafeAssignment 1 – Experiment 1 Density and Measurement
d. Open the browser and upload a copy of your discussion. Submit the written assignment and select the option to have the assignment scanned if the option is available. Be sure your name, EID, section number and experiment number are included on your written report.
e. **If you are unable to upload your document because you are given an error message, please contact the Blackboard help desk** (**512-475-9400)** – the phone number is also available on the main Web page in Blackboard.
    i. Do not e-mail Dr. Lyon to ask for help regarding uploading documents into Blackboard, she will be unable to help you.
    ii. Do not contact your section TA, she or he will most likely be unable to help you.
    iii. Do not send a copy of the discussion to your TA or Dr. Lyon to prove that your discussion was written in time to submit by the due day and time.
f. DO NOT wait until the last minute to upload your written discussion into SafeAssign. Give yourself time to determine a solution to a problem of uploading a document otherwise you will be accessed a penalty if the document is not submitted on time.
g. You may contact your TA and Dr. Lyon about SafeAssign problems only if you are told by the help desk that there is a general problem with SafeAssign program and that you will have to wait until the problem is resolved. Once contacted, we will check for uploaded assignments and determine the day and time that SafeAssign had discontinued functioning. You should continue to try to upload your discussion a few times throughout the day. Usually the SafeAssign problems are resolved in a couple of hours. As a rule we will give you another 24-hr to submit your discussion if there is a general failure of SafeAssign program.
h. BE CAREFUL to upload your discussion into the correct assignment.
i. The discussion must be uploaded into SafeAssign on the day of your next lab period – by 8:00AM or 1:00PM.
j. Students who receive percentage matches on SafeAssign are not necessarily going to be accused of plagiarism. It is common for some of your written discussion to share similarity with other students. When a student's written discussion has a 25% or greater percentage match with only one or two other students, then there is cause for concern. However, if you wrote your discussion entirely on your own, you need not worry if there is a small percentage of matching.

3. **Unknown** – As part of some experiments (4, 5 and 8) you are required to identify an unknown compound or calculate the concentration of an unknown solution. These results are reported at the end of your lab report, which is turned in one week after finishing the experiment. Every unknown is worth 10 points, and will be graded solely on accuracy. A lab report that includes an unknown will still have a point value of 100 points (50 points written report and 50 points discussion).

Unknowns are distributed by the TA. YOU WILL BE GIVEN ONLY ONE UNKNOWN.

All lab assignments are due during the first 5 minutes of lab. Turn in any late papers to the lab stockroom, WEL 5.131, as soon as possible. An individual in the stockroom will time-stamp your late report and deposit it in the TA's late report mailbox. ***Do not*** wait until the next week to turn in late papers. The penalty is assessed daily; therefore, for every 24 hours that you wait to turn in your report the more points you will lose on that report. Note, the 10 point penalty for a late report is assessed immediately after the first 5 minutes of lab, even if you turn in the report later that day. When another 24 hour period has elapsed, you will be assessed another 10 point penalty. Contact your TA regarding concerns regarding a late report; do not contact Dr. Lyon regarding such matters.

4. **Laboratory Chemicals –** There is not an endless supply of chemicals available for students to use during experiments. Therefore, you will be required to take only the mass or volume of a chemical that is required by the procedure. You will not be allowed to repeat a procedure because you did not follow the protocol correctly.
5. **The LabQuest hand held instruments are expensive and should be handled as instructed in the lab manual.** Costly damage can occur if students push too hard on the instrument's screen with the stylus. Pulling the pH probe from the soaking bottle without loosening the cap can break the probe. **Students who mishandle the LabQuest instruments and cause damage will be assessed a $50.0 penalty!**

SAFETY

1. The biggest safety concern we have in lab is that any lab surface may be contaminated with chemicals. It's easy to pick up chemical contamination on your hands without even realizing it, and then something as simple as absently rubbing your eye can result in excruciating pain and permanent damage to the eye. Always wear goggles in the lab. Besides protecting your eyes from broken glass or chemical splashes, wearing goggles also prevents you from absently rubbing an eye. Make sure you wash your hands before touching anywhere near your eyes in lab, and always wash your hands before you leave lab.
2. The second biggest safety concern we have in our laboratories is broken glass. Glass breaks every week. Small pieces may fly through the air (so always wear goggles) and large pieces fall downward (so wear long pants and shoes and socks, not sandals).
3. On the first day, your TA will show you around the lab and point out various pieces of safety equipment, which include a safety shower, eyewash fountain, fire blanket, and fire extinguishers. Make sure you know the location of the nearest emergency exits. In the event of an accident, do not panic. Call your TA, the instructor, or storeroom personnel immediately for assistance. They will help you resolve the situation.
4. **Wear safety goggles provided by the Chemistry Department at all times while you are in the laboratory.** If you wear glasses, you still need to wear safety goggles (they will fit over your

glasses). If you are observed to have your goggles off twice while you are in lab, your TA will kick you out of lab and you will get a 0 for the experimental part of that lab.

5. Wear appropriate clothing to the laboratory. No shorts or short skirts or sleeveless tops. Pants and skirts have to go all the way to the ankle. Arms need to be covered to the elbow. No bare-tummy shirts – the lab bench tops are at tummy level, and that's where many spills end up, so your tummy must be covered. Wear shoes that cover your feet completely. Sandals, clogs, and open-toe shoes are prohibited. If you want to wear shorts, keep a pair of sweat pants in your lab drawer. If you dress inappropriately, you will have to wear a Tyvek bunny suit from the stockroom and you will lose points. You will be allowed to wear the Tyvek suit only once without penalty. The second time that you show up to lab with inappropriate attire, you will assessed at 10-point penalty on the lab report for that lab period.
6. Keep backpacks off the bench tops and the floor. There is a sectioned wall shelf for storing backpacks and coats during lab.
7. No eating, drinking, or chewing gum is allowed in the laboratory at any time. Never put anything in your mouth while in the lab because you may have chemicals on your hands without realizing it.
    a. The use of cell phones, smart phones, iPods, MP3 players, lap tops and iPads are not allowed in the lab. You may not leave the lab during the lab procedure to talk on your mobile phone.
    b. Dispose of all chemical waste into the DESIGNATED WASTE CONTAINERS located in the hood. DO NOT place weight boats, paper towels, Kim wipes, nitrile gloves or broken glass into the solid waste containers. The solid waste is for solid chemicals or metals only. Broken glass must be placed into the containers specifically labeled broken glass.
    c. *Always wash your hands when you leave the laboratory at the end of the lab period*.

STOREROOM

The storeroom is room WEL 5.131, located next to the exit in the hallway in the east wing. Any time you need a piece of equipment, you will get it from the storeroom. Make sure you sign your name on the checkout list when you check out the equipment and cross your name off the list when you return it back to the storeroom. Clean any borrowed equipment before you return it. **You are financially responsible for any equipment checked out to you, including the equipment in your lab drawer.**

All late lab reports should be taken to the storeroom to be time-stamped. The late report will be deposited into your TA's mail slot by one of the storeroom personal.

If you drop the class after checking in to a drawer, you are required to check out your equipment drawer before the end of the semester. If you fail to check out on time, you will be charged a $15 checkout fee in addition to the charges for any missing or damaged equipment.

RESTROOMS

There is a men's room in the 4th floor hallway next door to room 4.124 (next to the stairs). The nearest women's restrooms are located on the 3rd and 5th floors.

GRADING

The breakdown for your overall course grade is the following: (The lowest quiz, written report/discussion and TA evaluation will be dropped.)

Quiz – 25% (drop one)
Report & Discussion – 60% (drop one)
Post-labs – 5%
TA Lab Safety/Technique Evaluation – 10% (drop one)

The lowest quiz, report/discussion and TA evaluation will be dropped.

There is no end of semester final exam in this class. There will be no curve, although consideration by be given to students whose scores are on the bubble and fall between 0.60 and 0.99. For example, a student who has a course score of 89.64% may have his or her grade bumped to an A-. Dr. Lyon will make the determination based on quiz scores and improvement of lab report scores.

The University of Texas has implemented plus/minus grade system that began in the fall 2009 semester. The grade breakdown for this system is as follows:

Grade	GPA	% Range
A	4.00	93.00-100%
A-	3.67	90.00 ≤ 92.99%
B+	3.33	87.00 ≤ 89.99%
B	3.00	82.00 ≤ 86.99%
B-	2.67	79.00 ≤ 81.99%
C+	2.33	76.00 ≤ 78.99%
C	2.00	71.00 ≤ 75.99%
C-	1.67	69.00 ≤ 70.99%
D+	1.33	66.00 ≤ 68.99%
D	1.00	62.00 ≤ 65.99%
D-	0.67	59.00 ≤ 61.00%
F	0.00	Below 59.00%

RE-GRADES

You can request a re-grade of your lab report within TWO WEEKS after you get it back from your TA. To be considered for a re-grade, you must submit the original assignment in question accompanied by a written specific explanation of why you think you deserve a re-grade. When submitted for re-grade, the entire assignment will be reviewed, which can possibly result in a lower grade.

Re-grade Guidelines:

1. You can always submit an unknown for a re-grade if you discover that a calculation error led to an incorrect result, but you will not be granted a re-grade based on mistakes you made during the actual lab procedure itself. So if the problem is in the data itself, you're stuck with it, but if you multiplied instead of dividing, you can show us your mistake and get a re-grade for partial credit.
2. If you lose points on your written discussion, it may be is possible to receive a re-grade for partial or more credit provided your TA is willing to allow to students to rewrite a discussion. The discussion re-grades will only be allowed for the first experiment and second experiment. When a TA grades a set of lab reports and deducts most or all points for the discussion portion of the lab report, he or she will let the lab class know (through e-mail, in lab or as written comments on the returned lab report) what information was generally missing and what needs to be improved upon when writing a discussion. Students, at that point, will have the feedback necessary to write a

better and more thorough discussion and may be given a second chance. By the third lab report, re-grades will no longer be considered for the discussion portion of the lab report.

3. If you lose points on your written discussion, it may NOT be possible to receive a re-grade for partial or more credit if your TA was very lenient when grading the discussion portion of the first two experiments. When a TA grades the first two lab reports and deducts very few points for obviously poorly written discussion but gives plenty of written feedback, students will have obtained the maximum amount of points that would have been available through a re-grade. All future written discussions will then be subject to more severe point penalties if improvement has not been shown. By the third lab report, re-grades will no longer be considered for the discussion portion of the lab report.
4. If it is obvious to your TA that you did not know how to analyze your data, you will not be allowed a re-grade. If you do not know what you are doing when you analyze data on a lab report, you need to seek help from a TA or Dr. Lyon before you submit the report to your TA. Office hours are available throughout the week. If you need help, get help.
5. You may not submit your graded lab report for a re-grade because you omitted observations, calculations or results in your original notebook copy pages. This information is always required in a lab report. If you forget to show your calculations, or observations, or results, it will be costly in terms of point deduction. You will not be allowed to go back and write in the missing information and submit the report for a re-grade.

ATTENDANCE POLICY

1. Laboratory attendance is mandatory. The TA's will record attendance each week.
2. There are no make-up labs for this course. However, if you know that you will miss a lab or have to miss a lab before the end of the week, it ***may*** be possible to make-up the lab during an earlier or later lab session during the week of the lab you will miss; however, the reason for missing the lab must be documented; e.g. illness (student health services issue doctor visit notes), U.T. sponsored events, a fender bender, religious holiday or a family crisis. Neither oversleeping nor leaving for a family vacation is a valid reason to miss a lab. Showing up late to a lab will result in a zero and you will not be allowed to attend other lab that week. Once the week of a particular lab experiment has passed, there is no possible lab make-up (there are no lab make ups on Saturdays). Therefore, it is to your advantage to inform Dr. Lyon by e-mail as early as possible (like today, right now) if you know you will miss any labs during the semester.
3. You are allowed to miss ***ONE laboratory*** session during the semester for any reason, such as late registration, illness, any type of emergency, observance of religious holidays, going out of town for any reason, oversleeping, opting to study for another class, etc. The score of zero for this missed lab will be dropped. You may not miss more that one lab unless you have documentation from Dean of Students Office for both labs missed.
4. If you miss a week, the report that was due that week will instead be due as soon as possible without a penalty. Take your lab report to the stockroom and have it time stamped as soon as it is possible. E-mail your TA and inform her or him that you have turned in your lab report. It is to your advantage to have your report graded with the class reports, TAs often forget the point deductions taken on previously graded reports and it is possible that your report will be graded more harshly if it is handed in too late. **This free extension is granted once per semester**. If you miss lab a second time, all late penalties will apply. If you know ahead of time that you will miss lab, you can turn your lab report in early to the stockroom.
5. ***No make-up quizzes will be given for missed classes.*** One quiz score is dropped at the end of the semester.

6. More than one missed lab will be allowed only under ***extreme circumstances***. Those instances will be considered on a case-by-case basis. For scheduled university events that will require you to miss more than one lab, you must give at least 14-day advanced notice so that we may arrange for you to complete the experiment in an earlier or later lab those weeks. If you will miss more than one laboratory session due to observance of religious holidays, it is the policy of UT that the student must notify the instructor at least 14 days in advance so that we may arrange for you to complete the experiment in an earlier or later lab those weeks.
7. Any absence after the first one will result in a zero for the lab. You will then have two zeros for lab report scores of which only one will be dropped.
8. If you are more than 30 minutes late to the lab, you will not be permitted into the lab and will receive a zero for the missed laboratory.
9. If you leave the lab early without permission from your TA, you will receive zero credit for the laboratory report for the experiment performed on that day.
10. Do not leave the lab during the lab procedure for any reason unless you have permission from your TA.
11. Do not enter your lab until your TA arrives. This is a safety policy.
12. We do not have the resources to allow students to redo labs they have already done in order to get better data and a higher grade.

SCHOLASTIC DISHONESTY

Scholastic dishonesty and plagiarism will not be tolerated. Examples of scholastic dishonesty include copying post-lab answers from or providing post-lab answers to another student by any means. Copying any or all parts of a report that is somebody else's work is prohibited; that includes copying information from a Website. Providing any parts of a report or discussion to somebody else to copy or by transferring your work to someone by any method is considered scholastic dishonesty. Scholastic dishonesty includes making up data, changing data, falsifying data, presenting somebody else's work as your own or altering any graded paper and resubmitting it for a re-grade. The carbon copy report that you hand in must be an exact copy of the information written in your lab notebook. Any changes that you make on a carbon copy that is not made on the original copy must be signed by your TA. You may not discuss quiz material with students in other lab sections by any means.

CH204 students are not allowed to work together on post-labs, reports or discussion write ups. You may talk with other students about the material and your understanding of the concepts, but the work you turn in must be your ***own individual effort***, not answers that were developed with somebody else or answers that were provided by somebody else by any method (in person or electronically). During this semester, you will work in teams of two or three on certain experiments. ***You may collect the same data, but you must write your own lab report and submit your own discussion.*** You may not change your answers once you have arrived to lab, all changes must be on the original and carbonless copy of your lab report. You must write the discussion in your own words. You may not copy from a peer's discussion, or from a text or lab manual or from information on the Web. Under no circumstances may you discuss your unknowns with your peers in your section or any lab section. Under no circumstances may you inquire confirmation of your unknown results from your TA.

If someone has offered you their old lab manual or reports or other papers from CH204, give them back today. We take considerable efforts to dissuade students from cheating and to catch them when they do. This course is rigged throughout with hidden trip wires designed specifically to catch cheating students, and every semester they prove they're working. All student grades are recorded in duplicate to minimize

the chance of accidental mistakes in the record, and student papers may be photocopied at random or with cause at any point throughout the semester. Any student who is found to have cheated will be reported to the Student Judicial Services in the Office of the Dean of Students with a recommended grade of F for the course.

Students should be aware that all required discussion assignments will be submitted through a plagiarism-detection tool called SafeAssign. SafeAssign is a software resource designed to help students avoid plagiarism and improper citation. The software encourages original writing and proper citation documentation practices by cross-referencing submitted materials with an archived database of journals, archived database of previous CH204 discussion submissions, essays, newspaper articles, books, Websites and other published work. In addition, other methods may be used to determine the originality of the paper.

INCOMPLETES

An incomplete for this course is only considered when a student is unable to complete the course requirements due to extreme circumstances. You must have completed at least six of the labs, have at least a C average in the course and have compelling documentation for missing the labs before an incomplete will be considered. During the next long semester, you will be required to make up any missing labs by performing the labs during the weeks they are scheduled to occur; we do not have the resources or lab space to conduct make up labs outside of the dates they are scheduled to occur.

SPECIAL NOTE

If you require special assistance because of a physical or learning disability please notify Dr. Lyon immediately. Arrangements and necessary accommodations will be made in compliance with UT policy and the American Disabilities Act. For more information contact Student Dean's Office (471-6259, 471-4641). All notifications and accommodations will be handled with utmost respect and confidentiality. No consideration will be given to lab report scores, post-lab scores or quiz scores that were accumulated before special assistance documentation is provided to Dr. Lyon.

Students may not request extended time in the lab during experimental procedures; the lab period cannot be lengthened beyond the scheduled four-hour time allotted to complete experimental procedures.

BRIEF SUMMARIES OF THE EXPERIMENTS WE WILL DO THIS SEMESTER:

Experiment 1. Density and Measurement

Are the densities of Coke and Diet Coke different, and if they are, is the difference large enough that we can measure it using the equipment we have in lab? You will write and perform procedures for determining the density change that does or does not occur when different volumes of water are measured at constant temperature. The main purposes of these experiments are to familiarize you with the lab glassware, the analytical balance, the statistical analysis you will be using this semester and the process of the scientific method. We will also review significant digits and how to report experimental error.

Experiment 2. Enthalpy of Chemical Reactions – Hess's Law

In this two-part experiment, you will work with a partner to determine the change of enthalpy of a neutralization reaction and determine the enthalpy of formation of magnesium oxide by calorimetry. Both parts of the experiment will require you to measure the temperature change of several chemical

reactions with a coffee cup calorimeter, to determine the heat energy given off by the reactions, to sum the reactions and determine the change in enthalpy of the reaction by using the principles of Hess's law.

Experiment 3. Determination of a Chemical Formula and Chemical Nomenclature

In this experiment, you will use the law of definite proportions to find the chemical formula for a hydrated compound containing copper, chlorine, and water molecules locked in the crystal structure of the solid compound. You will gently heat a sample of the compound to drive off the water of hydration. By measuring the mass of the sample before and after heating you can determine the amount of water in the sample. Secondly, you will conduct a chemical reaction with the dried sample, which will produce elemental copper. By measuring the mass of copper that forms, you will have the necessary information to determine the moles of copper and chlorine in your sample, and you will be able to establish the proper chemical formula and to name your compound. Moreover, you will learn to write and name formula units for ionic compounds and hydrated ionic compounds.

Experiment 4. Qualitative Analysis of Group 1 Cations Unknowns

In this experiment, you will develop a scheme for the qualitative analysis of three cations, using a schematic approach. The procedures in the qualitative analysis of this kind involve precipitation reactions to sequentially remove cations from a mixture of soluble salts. Along each step of the separation, the precipitated cation will be centrifuged and removed from the remaining soluble cations. The cations that we will study are Ag^{+}, Pb^{2+}, and Hg_2^{2+}. You will separate the three cations and on the basis of your observations and you will analyze an unknown solution that contains two or all three cations. Additionally, you will learn the solubility rules to determine the solubility of salts.

Experiment 5. Acid-Base Titration Unknowns

In this experiment you will make and standardize a solution of NaOH. This standard sodium hydroxide solution will used in the titration of a strong acid solution in order to determine the concentration of the acid. You will use both an indicator and a pH meter to determine the concentration of an unknown acid and you will graph your pH results in Excel. Your unknown will be graded on accuracy.

Experiment 6. The Cycle of Copper Reactions

During this experiment, you will produce and observe some colorful aqueous copper (II) complexes and classify each reaction according to its reaction type. You will begin with a sample of copper metal and will carry it through a cycle of reactions where you begin and end with solid copper metal. In the final step of your procedure, you will recover, weigh and calculate the percent recovery of your original sample of copper.

Experiment 7. Acid-Base Equilibria

In Experiment 5 you completed an acid-base titration using a strong base to titrate a strong acid to the endpoint. This week your goal is to develop a titration curve for a weak acid, CH_3COOH, with a base of known concentration and from the results of the curve, determine the ionization constant (K_a) and pK_a of the weak acid. During the second part of the experiment, you will prepare a buffer composed of acetic acid and sodium acetate and test the buffering capacity of the buffer with small amounts of strong acid and strong base.

Experiment 8. Oxidation-Reduction: The Analysis of Household Bleach Unknowns

This experiment illustrates how redox reactions can be used to quantitatively determine the amount of oxidizing agent in liquid hypochlorite bleaches. The sodium hypochlorite in bleach will be used to oxidize added excess iodide ion. The percent by mass of oxidizing agent will then be determined indirectly by titration of the iodine ion with a standardized thiosulfate solution. ***During the last half of this lab you will begin experiment 9, the synthesis of aspirin.***

Experiment 9. Synthesis and Analysis of Aspirin

In this experiment, you will synthesize and analyze aspirin (completed in the prior lab). Although there is more than one way to synthesize aspirin, we will react acetic anhydride with salicylic acid in the presence of phosphoric acid (which acts as a catalyst) to produce acetylsalicylic acid (aspirin). The percent yield of your aspirin product will be determined. You will conduct a test of your synthesis to determine its relative purity by using a Spectrophotometer to test the absorbance of your aspirin after it has been "prepped" with an iron solution to give it color. ***This lab period will be devoted to the analysis of the aspirin product synthesized in the previous lab.***

Experiment 10. Determining the Ksp of Calcium Hydroxide

Your primary objective in this experiment is to test a saturated solution of calcium hydroxide and use your observations and measurements to calculate the K_{sp} of the compound. You will do this by titrating the prepared $Ca(OH)_2$ solution with a standard hydrochloric acid solution. By determining the molar concentration of dissolved hydroxide ions in the saturated $Ca(OH)_2$ solution, you will have the necessary information to calculate the K_{sp}.

END OF SEMESTER COURSE GRADES

Over the years, it has been my experience that during the last week or two of labs that some students will e-mail with a long explanation concerning his or her performance in the course with an accompanied appeal for special consideration. In all my years of teaching, I have never changed a grade because of such requests and I will not change my policy this semester.

The University of Texas requires that grades are assigned according to the student's performance. In other words, you earn your grade as indicated by the policies outlined in this course syllabus. I do not allocate grades based on special situations; although I may be sympathetic, I enter grades based on percentage cutoffs.

I have also discovered over the years that numerous students believe that they worked extremely hard to do well in the class and are convinced they learned more than their grades reflect. Fair, as defined by Webster, "implies the treating of both or all sides alike, without reference to one's own feelings or interests'. To adhere to the definition of fair, it is necessary that the requirements set for this course are the same for all students. If you have an extraordinary situation arise during the semester that may hamper your performance in the class, you should contact me immediately, or should take the necessary steps (inquire in Office of the Dean of Students) to alleviate your student responsibilities; this may be a special situation for dropping the course, or a matter of taking an incomplete for course (see rules regarding incompletes). **Please do not ask that i consider changing your grade because i will not respond to such a request.**

I DO NOT GIVE EXTRA CREDIT ASSIGNMENTS, PLEASE DO NOT ASK! At this point in your educational pursuits, it is time for you to learn that success is a result of effort, determination and

discipline. To wait until the end of the semester to plead for grades or to solicit extra credit assignments is immature and improper. At the university level it is important that you learn to take responsibility for your successes and failures, and hopefully, learn from them.