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### **Required Course Materials:**

**1. Textbook:** Chemistry, The Central Science, 14th ed. by Brown, LeMay, Bursten and Woodward; Chapters 1-9. Chem 1412 uses the last half of the same text. These are available at various bookstores or online sites. For an "e-textbook" at about half the new price, go to [coursesmart.com](http://coursesmart.com). Older editions of the text are acceptable and can be purchased from online stores for giveaway prices (\$10-50). The previous edition texts are very similar, but the homework problems and some illustrations are different. I don't assign homework from the book, so any of these texts will work. You are expected to read the text for an explanatory overview of the material as well as refer to it for more detail than we have time in class to cover. The problems worked out within each chapter are an invaluable guide, and the problems posted at the end of each chapter give you extra practice, with answers given in the back. Textbook solution manuals, student guides, and companion online programs are also available, but none of these are required.

**2. Internet Homework:** Since there is flexibility in textbook edition choice, our homework is standardized by using a nationally recognized online graded homework program that is independent of the text. I have negotiated a discounted rate for you of \$25, much lower than the national rate. The SaplingLearning program contains daily graded homework sets as well as timed graded quizzes, and is a required part of our course. Overall, the homework grade is worth **the same number of points as a test grade**. A point on the homework is the same as a point on a test. Practice in working mathematical based problems is **essential** for processing and learning chemistry concepts, but I realize it can sometimes be very time consuming and frustrating. This online program allows you to earn some credit for the time and effort spent doing that. However, the point value for each problem is small to minimize stress. The goal is for you to concentrate on using the program to learn rather than just focusing on acquiring points. Most of the problems contain hints, some contain tutorials, and many contain factual explanations and warnings that are useful. After an answer is submitted, you have instant feedback about its correctness and an opportunity to try again, or give up and examine a complete worked-out solution. I recognize that students can obtain homework answers (and therefore, points) from other sources, without actually working the problems themselves. Every semester I have some students with very nice homework grades and horrible test grades. They usually end up failing. Don't be tempted to make that mistake. The homework is a tool for learning that you should take advantage of.

You should **create your Sapling account** by going to: [SaplingLearning.com](http://SaplingLearning.com)

Click on "US Higher Ed", access Sam Houston and my course for this semester. **Make sure the course you sign up for says: CHEM 1411 SPRING 18 ROSE** I teach other classes with Sapling, and you don't want to end up on the wrong roster. If you have any problems getting the program to work, please contact the Sapling help team (not me) to get the quickest solution.

The website will let you look at and interact with the program for free, but you cannot earn any credit until you pay for it. Be sure to use the training features and practice problems, so you are confident in correctly entering answers and don't unnecessarily lose points. The first **homework** set is due during the second week of class. Deadlines are clearly posted for each assignment. You can work on the homework, on and off, as much as you wish up until the posted deadline. I encourage you to work ahead and not wait until right before the deadline since computer problems, illness, forgetfulness, etc. are not considered excuses for changing a deadline. Extensions to deadlines will not be made unless it is reasonable to do so for the entire class. Each homework set already has an automatic one day extension for up to half credit. The **quiz** for each chapter is timed and contains no hints or feedback (and no extensions). Once you click on the quiz, you will have only two hours to finish it, but during that time you can change your answers as many times as you wish without penalty. Unlike the homework, the quizzes will not respond to or even acknowledge your submitted answers. Your grade for the quiz will be determined only from the last answers submitted and will show up only after the deadline. Quizzes may contain questions from the entire chapter and are worth more points than a single homework set. They help prepare you for a test situation, but those few questions should NOT be considered

comprehensive in covering all material for the test. Test questions may come from any of the homework sets, problems worked in class, extra material posted on Blackboard, information noted on the handout and in class, and especially, any material I particularly tell you to know.

**If you encounter a problem within the program or have technical issues, please contact the help**

**email:** [support@saplinglearning.com](mailto:support@saplinglearning.com) and completely describe your situation. Unlike me, their people have the expertise and access to correct glitches within the program. Depending on your computer, you may have to change a browser setting or install a special app. They will guide you through that. If you continue to have an unresolved problem, then you should let me know and copy me on your emails to them about it.

**3. Basic scientific calculator (TI-30 series)**----This is the required calculator for all lab and lecture courses in the department, and is priced around \$15 at Walmart and other stores. You will **NOT** be able to use your cell phone, ipad, laptop, or any other brand or series of calculator because many of these have the ability to store or retrieve information or access the internet. Any of the TI-30 series is allowed, but the TI-30Xa is recommended for its simplicity of use. I strongly encourage you to use the same calculator for class and homework that you bring for the tests, so you will already be very familiar with its use. During each test, I WILL check calculators, so be prepared. You do not want to be stuck doing one of my tests without a calculator.

**4. Scantrons**, form 882-E (50 multiple choice answers per side) for exams and form 815-E (15 multiple choice answers on 1 side) for class quizzes. You should get a package of each. Carry the small ones with you for unannounced class activities.

**5. Valid email address** (make sure your inbox isn't full), and access to BlackBoard where I post grades, announcements, the syllabus, and extra material.

**6. Supplemental Instruction**

Supplemental Instruction (SI) is a free and anonymous peer-facilitated academic support program sponsored by the Math department. SI pairs weekly study sessions with traditionally difficult courses. Attendance is optional but encouraged. More information will be given at the start of classes.

**Course Description and Objectives:** This is the first semester of general chemistry designed for science majors and minors. Chem 1411 may also be a prerequisite for another course in your major or minor field (chemistry, biology, forensics, math, computer science, physics, environmental science, geology, nutrition, and some pre-professional programs in dentistry, medicine, medical technology, veterinary science, osteopathy, pharmacy, engineering, podiatry, and physical therapy.) Previous knowledge of chemistry is helpful, but not necessary. However, proficiency in algebra IS expected and will be used regularly. You should feel confident using basic algebra, or success in this course will be difficult. Chemistry is the study of the structure and behavior of matter. The course material is naturally cumulative, and will emphasize atomic and molecular structure, nomenclature, dimensional analysis, ions, solutions, stoichiometry, electronic structure, molecular geometry, and more. A grade of C or better in General Chemistry I (Chem 1411) is a prerequisite to registering for Chem 1412. The lecture and lab are combined as one 4 hour credit course. Your course grade will be determined from a combination of lecture grade and lab grade with the laboratory portion counting for 20% of the overall grade. In order to make a C or higher in this course (which is the requirement for Chem 1412) you must earn at least a C in **both** the **lecture** portion of the course **AND** in the **laboratory** portion of the course. See your laboratory syllabus for details regarding the laboratory portion of the course. If you fail the course, you will have to retake both the lecture and the lab.

**GRADING:**

Lecture Class Grading:

Test 1 ----- 100 pts

Test 2 ----- 100 pts  
Test 3 ----- 100 pts  
Test 4 ----- 100 pts  
Final Exam ----- 100 pts  
Final Exam ----- 100 pts

500 pts ---of the above 6 grades, the lowest one is dropped---to give a total of 500 (The final exam must count at least once.)

Sapling Homework/Quizzes---100 pts (but about 108 can be earned, with the 8 as extra credit)

In class activities----- bonus (varies, about 10-25 can be earned)

Total -----**600 pts** is considered to be 100% (but about 618-633 can be earned)

**Lecture Grade Scale:**

540 -- 600 pts ----- A (90% +)  
480 -- 539 pts ----- B (80% +)  
420 -- 479 pts ----- C (70% +)  
360 -- 419 pts ----- D (60% +)  
0 ----- 359 pts ----- F

**Overall Course Grading:**

Lecture ----- 600 pts (80%) This is your Lecture Total pts  
Laboratory ----- 150 pts (20%) This is your Lab % grade times 150  
750 pts Total (100%)

**NOTE:** If either your Lecture grade is less than 70% **OR** your Lab grade is less than 70%, **you cannot make higher than a D for the overall course. And, you MUST make a C or better in order to be allowed to register for the next course, Chem 1412.** In other words, if you have a 99% in lecture and a 69% in lab, you will make a D for the course, regardless of how it averages out. Conversely, if you have a 69% in lecture and a 99% in lab, you will also make a D for the course. And in either case, you will have to retake both the lecture and the lab before going on to Chem 1412. Please note that this is by department mandate and is not a matter of my choice.

**Overall Course Letter Grade Scale (will appear on transcript for entire course):**

675 -- 750 pts ----- A (90% +)  
600 -- 674 pts ----- B (80% +)  
525 -- 599 pts ----- C (70% +)  
450 -- 524 pts ----- D (60% +)

**Tests:** There are four tests throughout the semester, each worth 100 points. Each test covers about 2 chapters in the text but is cumulative in the sense that the material builds on previous concepts. Students are responsible for bringing a scantron, #2 pencil, eraser, and approved calculator to the tests. Sharing calculators or using cell phones during tests is not allowed for obvious reasons. Each test contains both an objective section and a hand-written problem solving section. I assume you would not miss a lecture or a test unless you had a very good, legitimate reason. But, there are **NO MAKE-UP EXAMS** or EARLY EXAMS for **ANY** reason. ANY reason includes if you were sick, overslept your alarm, had a flat tire, were given a speeding ticket, had a family emergency, sick child, required surgery, were summoned to appear in court, participated in an official school event, played on a team, had a job interview, or anything else. You will receive a zero if you miss a test for ANY reason. However, these things do happen, and I know that almost everyone must occasionally miss an exam. Therefore, my accommodation for such unavoidable absences is to allow you to substitute your final exam grade (it is cumulative—covers the entire semester’s material) **in place of a missed test grade**. Also, sometimes illness, extracurricular activities, or problems at home may prevent you from studying effectively or doing your best on an exam, so I extend the above policy to include your lowest test grade, whether it is a zero for an absence or simply a low performance grade. You will find it is in your best interest to take each exam seriously and not plan on having to count the final exam grade twice. Each of you will have a unique set of circumstances this semester, but I believe this policy is carefully designed to include both compassion and fairness to everyone. Blackboard will show a grade for each of the four tests (zero for an absence), and it will show the grade for the final exam twice (duplicate grades). That is six grades, but only five of them will count toward your course grade---the lowest one will be ignored. That may be a zero for a missed test, or even one of the final exam grades if it is your lowest (you cannot drop BOTH final exam grades---at least one of them must count). If you have to miss two of the four tests, then you need to have a conversation with me about the nature of your emergencies and official documentation for each absence. See below for tentative test schedule.

**Final Exam:** The final exam is comprehensive (covers material from chapters 1-9). Since the final exam grade may also substitute for your lowest test grade (in that case, 200 of the 600 total points), it is important to continue to sharpen your understanding of all the material throughout the semester. The exam may contain questions from previous tests as well as new questions, but due to time constraints in posting grades, it is all multiple choice. It will NOT be given early or late unless you have 3 or more finals on the same day.

**Class Activities:** There will be several graded in-class activities/quizzes which may or may not be announced. You should always have a short scantron with you in case it is needed. Attendance is necessary to earn these points. There are **no make-ups**, even for excused absences. These “extra” quiz/activity/homework points are bonus points. You can miss these and still theoretically earn 100% of the course points. However, these are the only “extra credit” points available for this course.

**Assignments:** Homework Program, Textbook, Handouts, Blackboard. For each text chapter, there will be several assigned graded (2 points each) homework problem sets at SaplingLearning.com (see access instructions). Please follow their instructions, and do their practice exercises so you don't unnecessarily lose points from a misunderstanding.

**Contact their support team if you have difficulties.** Once a problem is finished and graded, it cannot be done over again, but is available for review throughout the semester. After the submission deadline, you can earn up to half credit for that homework for the next day only. Absence from class does not excuse you from the homework and quiz deadlines which are clearly posted. Enough “extra” points are included overall to accommodate several missed assignments before it starts to penalize your course grade. If you do complete all the assignments and quizzes, you get to keep the extra points as bonus points. These and the class activities are the **ONLY** source of “extra credit” points you will have for this course. You cannot write a report or do a project to pull your grade up at the end of the semester. You must actually learn the material in order to have a foundation to proceed with Chem 1412. So, every point you earn contributes toward your grade, but a couple of bad homework grades will not sabotage it. As you work a problem, pay

attention to the concept it is teaching---you may see this or a similar problem again on a test. Be sure to click on the full explanation of the problem after you have submitted your answer. Use the homework to help you learn the chemistry.

No credit will be given for problems attempted after their deadline, although they will still be available to use for studying. Note that this deadline is usually 11 pm several days following the lecture associated with the problem set. However, you should always check the deadlines posted on the website. And, although I try to cover subject matter in class before problems over that material are due in the homework, occasionally that is unavoidable. Your textbook does explain all the concepts behind assigned problems, and examples for working problems are given there as well. Typically, both a homework and a quiz have to be due the night before an exam (shorter deadlines), although the quiz is usually available to you for a week or more prior to that. I strongly encourage you to work the homework right after we cover the material in class instead of waiting until the last night. Last minute problems with computer access or other emergencies will not excuse you from the deadline. It is my policy to only extend homework deadlines when it is reasonable to do so for the entire class. And, since some like to study and work ahead, I will often post the problem sets prior to the associated lecture. In any case, assignments and their deadlines are clearly posted on the Sapling website along with any changes. You should make a habit of checking this. Each homework is named by the chapter # and a letter denoting lecture sequence. Note that assignment #s do NOT correspond to Chapter sections. Every semester, some students have a particularly difficult time remembering to do the homework before the deadline. These lost points seem small at the time, but can add up to have a devastating impact by the end of the semester. If this sounds like you, I suggest using your cell phone calendar and alerts, or one of those small schedule planners.

Material from the text will also be assigned to understand or memorize. You are responsible for text material regardless of whether it is specifically discussed in class or not. For the most part, I will spend our time in class explaining chemistry principles and working through problems rather than presenting facts that either the handout or your text has already presented to you. This means that you will gain the most benefit from class if you have already read the chapter material. Likewise, there is no real substitute for regular class attendance. During class, I will often point out what type of problems to expect on exams. Also, the handout focuses on the most important topics, and so serves as a chapter outline. When studying for a test, be sure you know the concepts in the handout. Some course documents, problem solving material, test reviews, and grades will be posted on Blackboard. I may also post some additional problems on Blackboard. It is your responsibility to check for all these items and stay current. The textbook problems are also useful if you feel you need extra practice with a particular concept. Red numbered problems have answers given at the back of the book. Problem solving is hard work, mentally, just as athletics is hard work, physically. Nevertheless, that work is essential in both for accomplishing the goals. In chemistry, you just can't "get it" by reading alone. Problem solving is really the "hands on" part of the lecture course. The Sapling Learning program, while not perfect, acts a bit like a personal tutor to help you get over some of the "bumps" and "hurdles" in this process. And, for each error you make, you are penalized a little---not a lot (usually 5%). Work the Sapling online problems and as many problems from Blackboard and the text chapter as you need to in order to learn the concepts---it's up to you. I also strongly encourage you to think/work through the sample exercises as they appear throughout the text. If you get "stuck", come see me for help. I will not work your homework problems for you, but I will help you work through something similar. And I will challenge you to tap into your own knowledge base and skills.

**Attendance:** I am required to take attendance for each class session and be able to report this to the university administration. For efficiency, seating will be assigned for purposes of recording attendance. If you fail to sit in your assigned seat, you will be marked absent. If you leave early, you may be marked absent unless you have already received approval from me to do so. If you arrive tardy after attendance has been taken, it is your responsibility to see me immediately after class to ensure that you are not marked absent. Frequent tardiness shows a lack of courtesy toward your classmates and instructor who have made the effort to be on time. Therefore, two tardies will be treated the same as one absence. Students with many absences generally perform poorly in this course, even when those absences are for a good reason. There are no direct penalties assessed for absences, but you may be sure that I notice who is there. It is the student's responsibility to obtain class notes, check for announcements, and complete assignments from any missed class session. I realize that a well-rounded student has important parts of life outside of school that may sometimes result in time conflicts. However, there are no make-ups given for missed tests or class

activities, and no personal extensions made for online work. Please note the test policy section above. Any exceptions to a policy make it unfair for those to whom exceptions were denied, and defeats the purpose of the policy. Therefore, I will sympathize with you over your circumstances, but do not expect any exceptions. I will assume that each of you has a good excuse when you are absent. Therefore, written official excuses (i.e. from a doctor, policeman, judge, school sponsor, etc.) are not needed unless you miss more than one test.

**Classroom conduct:** Students are expected to treat other students and faculty with respect, participate in class, and maintain honesty and integrity in the academic experience. The use of cell phones, MP3 players, and similar electronic devices is not allowed. Note taking on ipads or laptops is acceptable as long as you are not distracting others. And, seriously, if you just want to facebook or surf the net during class, why bother to come at all? Any disrespectful, inappropriate, or disruptive behavior may result in points docked from the final grade.

**Communication:** Announcements, changes, grades, assignments, etc. will be made during regular class time, through email, and through postings on Blackboard. It is the student's responsibility to check these sources and to get any information missed due to absences. Also, all students need to make sure that their email is functional (inbox not full). Due to time constraints and class size, questions during class must sometimes be limited. However, I am quite willing to help any student during office hours, or by appointment, or through email. I make every attempt to respond promptly to student emails.

**University Policy:** All university policies and procedures will be followed. More information can be found at shsu.edu.

**Test Schedule:** (subject to change---since needs sometimes change throughout the semester, *dates may be moved---so make your plans flexible*)

Test One-----Wednesday, February 7<sup>th</sup>

Test Two-----Friday, March 2<sup>nd</sup>

Test Three-----Wednesday, April 4<sup>th</sup>

Test Four-----Friday, April 27<sup>th</sup>

Final Exam-----see shsu calendar (5/7 for even hour classes, 5/9 for odd hour)

**Office Hours (tentative):** MWF 10:00-11:00 and 1:00-2:00, and MW briefly at 4:00. Please note that I may sometimes have an appointment with another student or be out of the office grading exams or in a meeting. If you want to be sure to meet with me, you should contact me ahead of time. Also, I will answer questions by email, and can sometimes make special arrangements to see a student with time conflicts.

**Final Words:** This course is challenging, but manageable. Don't ever let yourself get behind---it is 3 times harder to get caught back up. **Everything** we learn is going to build on what came before, so make sure you understand the fundamental principles. You may have to spend as much time studying chemistry as you would for 2 or 3 other typical courses. Make yourself study chemistry EVERY day. Waiting until the night or two before a test to tackle it is the way to spell disaster! Regular study allows ideas to soak into the deepest parts of your mind. Also, research suggests some of the most effective studying is done right before bedtime---presumably the sleeping brain reviews that material. Finally, the hardest part of chemistry is the conceptual part---I'm here to help you with that. Ask questions in class and see me individually if you need help figuring something out. Test questions over this material will tend to ask you to apply what you have learned to a new situation. The easier questions involve factual memorization. Only you can accomplish that, because "knowing" this type of material is just memorizing, not understanding. Facts are tools you will need for solving the harder problems. About one-fourth of test questions will ask for memorized facts. Don't miss out on these points by inadequate preparation.