

**Instructor information**

Dr. Stephanie Myers

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**Before you start****Prerequisites:** MATH 1113, CHEM 1211 *and* CHEM1211L**Corequisite:** CHEM 1212L is a co-requisite for this course. Unless you already have credit for CHEM 1212L, you must be signed up for that course as well as this one. Normally, if you withdraw from one course, you must also withdraw from the other. Withdrawal from course and lab only counts as one withdrawal.**General Course Objectives:** This class applies material from CHEM 1211 to specific systems like solutions, acids and bases and to specific problems like thermodynamics (enthalpy, entropy and spontaneity), kinetics (rates of reactions), equilibria and electrochemistry. You will be expected to operate at a more mathematically and intellectually sophisticated level than in CHEM 1211.**Required Materials:** Top Hat General Chemistry text (at tophat.com) and a scientific, nonprogrammable calculator Recommended: TI-30X. **No** graphing calculators will be permitted in class or on tests or on quizzes nor will calculators equivalent to these. (i.e., TI numbers 40 or higher are **NOT** permitted.)**Recommended Materials:** You may find *The Official Guide: Preparing for the ACS Examination in General Chemistry* helpful as you will be taking an ACS Exam as your final exam. If you want a hard copy text book, some recommended versions are by: Gilbert, Kirss and Foster or Nivaldo Tro (you do not need the latest version.)**Grading**

Final course average will be based on:

homework average = 15%; TopHat assignments = 5%; tests = 55% and final exam = 25%.

Course averages above 90% will earn an A; course averages over 80% will earn at least a B; course averages over 70% will earn at least a C\* and course averages over 60% will earn at least a D. Course averages less than 60% will earn an F. \*Students must also meet the department standard on the final (ACS) exam to earn a C or better in the course. If the course average is over 70%, but the final exam grade is below the department standard, the student will receive a D for the course.

**Myers Homework:** After each class (that is not a test day), a homework assignment will be posted on the course website (by 6 pm). Print it out, do it and bring a copy to class. Students randomly selected to have their homework graded will have their name written on the board. If your name is on the board, you must turn in your homework by 9:00 am. If you do not, you will receive a zero for that assignment. **I will not accept late homework.** If your name is not on the board, do not turn in your homework. Each homework assignment will be worth 10 points. Your 3 lowest scores of these assignments will be dropped; the remaining scores will be averaged for 15% of your course grade.**Top Hat assignments (5% of final grade):** This year we are using Top Hat as our textbook provider. The textbook is entirely online and contains reading assignments with corresponding questions to check for completion. Your grade on the reading assignments will count towards your final grade. You will also be assigned the homework questions at the end of each chapter and your grade on the homework will count towards your final grade. Taken together, your grades on Top Hat assignments will count as 5% of your final grade in the course. **I will not accept late homework.** You will likely get at least one dropped assignment grade in this category. As electronic homework always has some glitches, 90% correct will earn you full credit. HOWEVER, because of this accommodation students cannot earn more than 100% on any top hat assignment.**Other Homework:** Chemistry is learned through practice! You will have many non-graded assignments this semester. **You will find a comprehensive study guide on the course webpage that contains tons of practice problems that reinforce concepts covered in class.** These problems will not be graded; however, it is in your best interest to complete them on a **regular** basis in your quest to master the course material. Each day it will be highly beneficial to you to complete the assigned preview and review prior to the next class.

**Tests:** There will be four tests given during the term. Only a pencil and a nonprogrammable calculator are allowed during tests. Tests will be graded out of 100 points, but 104 – 109 points will be available (4 – 9 pts extra credit on each test!). The three tests with the highest scores will be worth 15% of the overall course grade. The test with the lowest score will be worth 10% of the overall course grade. (Total 55% for the tests). An unexcused absence from a test will result in a course grade of WF regardless of course performance.

**Final Exam:** The final exam is a standardized, multiple choice final published by the American Chemical Society (ACS). Grades will be based on comparison to national percentiles. Students must meet department standards on this exam to earn a C in the course. An unexcused absence from the final exam will result in a course grade of F regardless of course performance.

**Make-ups:** There will be NO make-ups on quizzes or homework (there are drops). If you are aware in advance that you will miss an exam, you must make arrangements to take it early. If you miss an exam, you must notify the instructor as soon as possible (same day!) and schedule a make-up exam before the next class period. Documentation of the reason you missed the exam may be required to make up the exam and will definitely be required if a second exam is missed. The instructor reserves the right to confirm any documentation and or deem it insufficient. Check what is considered appropriate documentation when you discuss the terms for the make-up exam. Make-up exams will likely be more difficult than the exam given to the entire class and will, regardless of performance, be the exam counted as 10% of your grade (rather than 15%).

**Extra-Credit:** Extra credit will be available on all tests and some Myers homework. **No other extra credit will be available.**

### General Policies

**Attendance:** You are expected to be present for all classes. If you miss 5 or more classes, you may be withdrawn from the course. This instructor does withdrawals after midterm, so if you are withdrawn by the instructor for excessive absences, you will receive a WF for the course. Attendance will be taken by passing around a roll for each student to initial. If, for whatever reason, you did not have an opportunity to sign the roll, do so after class. Do not interrupt class to sign the roll! Disruptive students will be asked to leave the class.

**Course website:** The course website will be updated (if needed) by 6 pm on class days. You are responsible for all information posted on the course website, particularly information in the announcement section. You are expected to check the website before each class period.

**Calculators:** Calculators may not be shared; you are expected to bring yours to **every** class. If you did not bring a calculator (or the appropriate one) you must complete the test/quiz without one. Instructor will not provide calculators.

**Test Procedure:** Only a pencil (not a pen!) with eraser and an appropriate calculator may be with you at your desk during a test (including the final exam). You bring a drink, but by doing so you have given permission for me to inspect it. Other materials (bookbags, phones, etc.) must be left at the front of the classroom, this includes smart watches or watches that even appear moderately intelligent. Any other items found at your desk will be considered an attempt to cheat and you will receive a zero on that exam.

**Electronic Devices:** Electronic devices may only be used for class-related activities. A student whose device is disruptive or is found using it for non-class related activity (as determined by the instructor) will be asked to leave for the remainder of the class. Laptops may only be used if they are in the back row of class (the screen distracts people behind you even when used appropriately). Any electronic device (other than an approved calculator) visible during a quiz or test will be considered an attempt to cheat and the student will get a zero for that assignment.

**Academic Honesty:** Cheating/plagiarism will not be tolerated and will be punishable by a zero on the exam/quiz/assignment and possible withdrawal from the course with a WF. This includes collaborating on graded homework, quizzes and exams. Copying someone else's answers is cheating. Do not post online (or otherwise share) any course material without instructor permission. See the academic honesty policy:

<https://augusta.policytech.com/dotNet/documents/?docid=1036&public=true>

**Grading Errors:** If an error was made in the grading of an exam or quiz, the student has two class days after it was returned *to the class* (regardless of whether or not the student was present) to request, in writing, a reevaluation of the grade. It is the student's responsibility to pick up any quizzes or tests if they were not present when it was returned to the class.

**Fire Alarms:** If an alarm requires the class to evacuate during a test or quiz, turn in the assignment as you leave the classroom. If you do not turn it in, you will not be allowed to complete it.

**Note:** The course instructor reserves the right to make changes to the course syllabus and schedule with reasonable notice to the students. The most up-to-date syllabus will be posted on the course website.

### **TENTATIVE Calendar**

|                 |  |
|-----------------|--|
| Friday Jan 5    | First day of Class   |
| Monday Jan 15   | MLK holiday, no class  |
| Friday Jan 26   | Test 1—intermolecular forces and properties of solutions               |
| Monday Feb 26   | Test 2—thermochemistry/thermodynamic and part 1 of kinetics            |
| Friday March 2  | Midterm, last day to withdraw with a “W”                               |
| Friday Mar 9    | Spring Pause, no class   |
| Friday March 30 | Test 3—kinetics part 2, equilibria and introduction to acids and bases |
| April 2-6       | Spring/Masters Break, no class   |
| Friday April 27 | Test 4—acid base chemistry and introduction to electrochemistry        |
| Monday April 30 | Last class   |
| Thursday May 3  | Final Exam, 8 – 10 am  |

### **Program Student Learning Outcomes**

1. Students will employ high scientific standards in their written work.
2. Students will responsibly engage the academic experience (preparation for class, attendance, timeliness, etc.).
3. Students will construct logical arguments based on the interpretation of scientific information (observations, data, literature).
4. Students will integrate mathematical skills to solve scientific problems.
5. Students will explain and apply knowledge of the major concepts of chemistry.

### **CHEM 1212: Student Learning Outcomes**

1. Students will be able to utilize Lewis structures to predict various properties of matter.
2. Students will be able to predict and compute the effect of impurities on the properties of pure substances.
3. Students will be able to predict how various factors affect the rates of chemical reactions.
4. Students will be able to use experimental data to mathematically express concepts of kinetics, thermodynamics and equilibrium.
5. Students will be able to use tabulated data to predict measurable information for a system under standard and non-standard conditions.
6. Students will be able to apply the concepts of equilibrium to chemical reactions.
7. Students will be able to distinguish the various theories of acid and base reactions and describe how acids, bases, and salts behave in aqueous solution.
8. Students will be able to identify oxidation-reduction reactions and relate electrochemical concepts to thermodynamic and stoichiometric parameters.