

# Freshman Chemistry II

## CHEM 1212

The instructor reserves the right to make changes or corrections to this syllabus at any time. Students will be notified when any changes are made by email or eLC announcements.

## Course Overview

### Description

Chemistry 1212 is a three-credit hour course with lectures either on MWF or TR for three hours per week. Chemistry 1212L is the companion one credit hour lab course and must be taken concurrently, unless you already have credit for the lab course. Chemistry 1212L meets once per week. CHEM 1212/1212L are freshman chemistry courses that are comparable to similar sequences for science majors taught at major state universities in the country. This course uses an American Chemical Society Examinations Institute standardized exam as the final.

### Instructor

**DR. SUZANNE ELLENBERGER**  
Chemistry Annex, Room 416  
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706-542-6625

**Office Hours:** by appointment  
**Problem Solving:**  
Tuesday and Friday 3:30-5:00, room TBD

### Course Information

There will be a weekly mandatory, in-person recitation session at the time listed on Athena.

### Textbook (e-text purchased through eLC)

Chemistry, 10<sup>th</sup> edition, Steven S. Zumdahl, Susan A. Zumdahl, Donald J. DeCoste, Gretchen Adams. The textbook must be purchased through eLC to receive the special UGA price of \$35.00.

### Other Required Materials:

Any non-programmable, scientific calculator such as the Ti-3x series or the Casio ClassWiz series (The TI-36x Pro is recommended).

### Learning Outcomes

1. Demonstrate the ability to solve scientific problems by following logical procedures based on well-established scientific principles.
2. Relate microscopic theories to macroscopic observations using chemical principles to explain observable phenomena.
3. Illustrate the principles of kinetics and thermodynamics as applied to rates and equilibrium positions of chemical reactions.
4. Use quantitative measures of solution concentration in describing acid-base, solubility, and electrochemical principles of aqueous solutions.

5. Interpret the value of logarithmic functions in the determination of rate constants; half-lives for radioactive isotopes; and solution concentrations of specific analytes (i.e., pH measurements to determine hydrogen ion concentrations).
6. Analyze nuclear processes such as radioactivity, fission, and fusion in terms of kinetic and thermodynamic principles.

## Course Requirements and Grading

### Course Coverage

These chapters will be covered in CHEM 1212:

Chapter 10: Liquids and Solids  
Chapter 12: Chemical Kinetics  
Chapter 17: Spontaneity, Entropy and Free Energy  
Chapter 11: Properties of Solutions  
Chapter 13: Chemical Equilibrium  
Chapter 14: Acids and Bases  
Chapter 15: Acid-Base Equilibria  
Chapter 16: Solubility and Complex-Ion Equilibria  
Chapter 18: Electrochemistry  
Chapter 19: The Nucleus: A Chemist's View

### Course Assignments

#### Recitation Sessions

Mandatory recitation sessions will be held each week at the time listed on Athena. During the recitation sessions, students will work in small groups on recitation worksheets. The worksheets will be converted to a PDF file and uploaded to Gradescope. Instructions for conversion of the worksheets to a PDF file and uploading to Gradescope are in separate documents and are available on eLC. You are responsible for uploading the correct file to Gradescope. Students must be present to receive credit. There will be 13 recitation sessions and the one with the lowest score will be dropped. The recitation attendance and worksheets will be worth 60 points. Recitation worksheets will be due on Tuesdays at 11:59 p.m. Late worksheets will not be accepted.

#### Class Activities

The instructor may provide student response questions, worksheets, or other activities during class meetings to augment the content. They will be worth 56 points.

Everyone in the course will receive a portion of the Class Activities points based on your total percentage. If you score 90% of the credit for the lecture questions, you will earn 90% of 56 points (or 50.4 points) toward your final grade.

**Academic Honesty Expectations:** You must respond to your own questions.

## Reading Checks

Before beginning a chapter in class, you will need to complete a reading check that assesses basic mastery of the material. Reading checks will be delivered on WebAssign and will be available on Fridays at 12:00 p.m. (noon) and will be due on Sundays at 11:59 p.m. There will be a total of **fifteen** reading checks worth **two** points each. The reading check with the lowest score will be dropped at the end of the semester. No credit will be received for late Reading Checks.

**Three** attempts will be allowed for each question in the Reading Check. There is a 5% penalty for each incorrect attempt, so it is in your best interest to work the problems as you read the chapter.

**Academic Honesty Expectations:** You may work in groups on reading checks; however, each of you must do your own problems.

## Progress Checks

Progress checks are timed assignments designed to test your understanding of the course materials and simulate exam conditions. The point value of progress checks has been intentionally set at a low value so that you can stumble on the progress check and not severely hurt your grade in CHEM 1212. It is much better to find out what you're struggling with on the progress check instead of the exam.

Progress checks will be delivered on WebAssign and will open on Fridays at 5:00 p.m. and will be due on Mondays at 12:00 p.m. (noon). **Be Aware:** Opening the progress check before it is due to look at the questions commits you to completing the assignment. The timer cannot be stopped or reset. There will be a total of **fifteen** progress checks worth **four** points each. The lowest progress check will be dropped.

**Academic Honesty Expectations:** You are expected to work on your own when completing the progress checks. You should not use any outside resources. This is your opportunity to see what you need to work on before the exam. You should not share or post progress check questions for other students while the progress check is open.

## Suggested Exercises and Practice Quizzes

Suggested exercises for each chapter will be posted and open for the entire term. I recommend that you do these practice problems with your available resources to help you build skills and master the material. These problems will not be graded.

## Exams

Four (4) 90-minute, 200-point examinations will be given on Tuesday evenings. **There will be no makeup exams.**

- Exams will be administered in person.
- Your exam grade with the lowest percent value will be replaced with your final exam percentage value if it is higher.

### Exam Schedule:

Exam 1	Tuesday, 7:00-8:30 p.m.	September 14
Exam 2	Tuesday, 7:00-8:30 p.m.	October 5
Exam 3	Tuesday, 7:00-8:30 p.m.	November 2
Exam 4	Tuesday, 7:00-8:30 p.m.	November 30
Final Exam	Wednesday, 7:00-8:50 p.m.	December 15

## Final Exam

The final exam will be administered on Wednesday, December 15. The final exam will be the **Full Year General Chemistry Exam from the American Chemical Society Examinations Institute**. This multiple-choice exam has a total value of 300 points in the course. Remember, if your percentage grade on this exam is higher than your lowest exam percentage grade, this percentage grade will replace it. It is in your best interest to do as well as you can on this exam.

## Course Grades

Requests for regrades on any assignment, including exams, must be submitted no later than one week after the score or key is posted.

Course grades in CHEM 1212 will be calculated based on these components:

Assignment	Points
Four exams	800
Final Exam (ACS)	300
Reading Checks	28
Progress Checks	56
Class Activities	56
Recitation Worksheets and Attendance	60
<b>Total</b>	<b>1300</b>

If you score below 50% on the final exam, you will receive an 'F' for the course. If you score 50% or higher on the final exam, your final grade will be based on the total points earned out of -- total possible points:

A	= 1170 to 1300	90%
A -	= 1144 to 1169.9	88%
B+	= 1118 to 1043.9	86%
B	= 1040 to 1117.9	80%
B-	= 1014 to 1039.9	78%
C+	= 975 to 1013.9	75%
C	= 884 to 974.9	68%
D	= 650 to 883.9	50%
F	= 0 to 649.9	

**Final grades will not be adjusted (i.e., "curved") at the end of the semester.** Course letter grades are delivered via Athena and appear when they are posted and released by the Registrar's Office.

## Policies and Procedures

### Communication

The instructor will communicate with the class in two ways: (1) email and (2) news posts on the course eLC site. You may login to eLC at <http://elc.uga.edu> using your UGA myID and password. It is highly recommended that you forward your eLC e-mail to your preferred e-mail address. Remember that official communication is through eLC e-mail and/or UGA mail. It is your responsibility by UGA policy to check both on a daily basis.

The eLC site will also be used to store and deliver lecture videos, lecture slides, exam resources, general handouts and other documents. You will also find instructions covering Gradescope and WebAssign.

## Email Etiquette

The course instructor receives a large number of student emails per day. To ensure your email is answered as quickly as possible:

- Do not send email to eLC accounts. Instructors may be reached via their primary email addresses.
- Instructors will not respond to questions that are answered in the course syllabus or postings on eLC.
- Please allow at least **48 hours** for a response due to the high volume of emails.
- Your emails must be both courteous and coherent. If you would not say it in person, don't write it in an email.
- Experience has demonstrated that it is not effective to answer homework or concept questions via email. In order to receive help concerning class work or homework you must visit your instructor during regularly scheduled office hours.

## What about lab (CHEM 1212L)?

CHEM 1212 and 1212L are individual courses that are administered and graded separately. You will receive separate and independent grades for these two courses. However, CHEM 1212 and 1212L must be taken concurrently. All students must be registered for both lecture and lab. (A small number of students may have already completed the lecture or lab when rules allowed that. Students who have taken CHEM 1212 and 1212L previously, and received grades of "I", should not register for the course(s) a second time because the earlier "I" grade will automatically be changed to an "F".)

## Withdrawal Policy

The last day to withdraw from CHEM 1212 is Monday, October 25<sup>th</sup>, 2021. A grade of 'W' is assigned to all withdrawals made prior to the withdrawal deadline, irrespective of performance in the course. Withdrawal is accomplished through Athena. Go to the withdrawal section of Athena and follow the instructions.

CHEM 1212 and CHEM 1212L are corequisite courses. You may not remain enrolled in CHEM 1212L if you withdraw from CHEM 1212. There are no exceptions to this policy. After the withdrawal deadline, no student may withdraw from CHEM 1212/1212L except in the case of an approved hardship withdrawal that is authorized by the Office of Student Services (<http://reg.uga.edu/policies/withdrawals>).

## Incomplete Policy

An incomplete grade, "I", may be assigned to students that are passing CHEM 1212 but are unable to complete all university coursework during the current semester due to unforeseen personal and/or medical circumstances. An incomplete grade is not assigned to students who are able to complete their university coursework but choose not to complete chemistry due to poor performance. In order to receive an incomplete in the class you must meet with your instructor and sign a contract which stipulates the terms and conditions of all university sanctioned incompletes.

## Disability Accommodations

Students with a disability that are seeking classroom or testing accommodations must register with the Disability Resource Center (DRC). More information can be found at [https://drc.uga.edu/site/content\\_page/register-for-services](https://drc.uga.edu/site/content_page/register-for-services).

## Academic Honesty

As a University of Georgia student, you have agreed to abide by the University's academic honesty policy, "A Culture of Honesty," and the Student Honor Code. All academic work must meet the standards described in "A Culture of Honesty" found at: [www.uga.edu/honesty](http://www.uga.edu/honesty). Lack of knowledge of the academic honesty policy is not a reasonable explanation for a violation. Questions related to course assignments and the academic honesty policy should be directed to the instructor.

## FERPA Notice

The Federal Family Educational Rights and Privacy Act (FERPA) grants students certain information privacy rights. See the registrar's explanation at <https://osas.franklin.uga.edu/ferpa-and-privacy>. FERPA allows disclosure of directory information (name, address, telephone, email, date of birth, place of birth, major, activities, degrees, awards, prior schools), unless a <https://reg.uga.edu/resources/documents/imported/FERPARequestForRestriction.pdf> is submitted to the Registrar's Office.

## Mental Health and Wellness Resources

If you or someone you know needs assistance, you are encouraged to contact Student Care and Outreach in the Division of Student Affairs at 706-542-7774 or visit <https://sco.uga.edu>. They will help you navigate any difficult circumstances you may be facing by connecting you with the appropriate resources or services.

UGA has several resources for a student seeking mental health services (<https://www.uhs.uga.edu/bewelluga/bewelluga>) or crisis support (<https://www.uhs.uga.edu/info/emergencies>).

If you need help managing stress anxiety, relationships, etc., please visit BeWellUGA (<https://www.uhs.uga.edu/bewelluga/bewelluga>) for a list of FREE workshops, classes, mentoring, and health coaching led by licensed clinicians and health educators in the University Health Center. Additional resources can be accessed through the UGA App.

## CHEM 1212 Tentative Course Schedule Fall 2021

Week	Dates	Chapter/Section	Reading Check	Progress Check	Recitation Session
1	August 18-21	Introduction, 10.1	RC1: 8/20-8/22 Ch 10.1-10.7	PC1: 8/20-8/23 CHEM 1211 Review	8/19 Not meeting
2	August 22-28	10.2–10.7 Omit X-Ray Analysis of Solids, Bragg Equation	RC2: 8/27-8/29 Ch 10.8-10.9, 12.1-12.4	PC2: 8/27-8/30 Ch 10.1-10.7	R1: 8/26
3	August 29-September 4	10.8-10.9, 12.1–12.4	RC3: 9/3-9/6 Ch 12.4-12.7	PC3: 9/3-9/6 Ch 10.8-10.9, 12.1-12.4	9/2 Not meeting
4	September 5-11	12.4–12.7	RC4: 9/10-9/12 Ch 17.1-17.7, 17.10	PC4: 9/10-9/13 Ch 12.4-12.7	R2: 9/9 Exam Review
	<i>September 6</i>	<i>Labor Day – No Class</i>			
5	September 12-18	17.1–17.7, 17.10	RC5: 9/17-9/19 Ch 11.1-11.3	PC5: 9/18-9/21 Ch 17.1-17.7, 17.10	R3: 9/16
	<b>September 14</b>	<b>Test 1 Ch 10, 12)</b>			
6	September 19-25	11.1–11.3	RC6: 9/24-9/26 Ch 11.4-11.8	PC6: 9/24-9/27 Ch 11.1-11.3	R4: 9/23
7	September 26-October 2	11.4–11.8	RC7: 10/1-10/3 Ch 13.1-13.5	PC7: 10/1-10/4 Ch 11.4-11.8	R5: 9/30 Exam Review
8	October 3-9	13.1–13.5	RC8: 10/8-10/10 Ch 13.6-13.7, 17.8-17.9	PC8: 10/9-10/12 Ch 13.1-13.5	R6: 10/7
	<b>October 5</b>	<b>Test 2 (Ch 17.1-17.7, 17.10, 11)</b>			
9	October 10-16	13.6–13.7, 17.8–17.9	RC9: 10/15-10/17 Ch 14.1-14.5	PC9: 10/15-10/18 Ch 13.6–13.7, 17.8–17.9	R7: 10/14
10	October 17-23	14.1–14.5	RC10: 10/22-10/24 Ch 14.6-14.7	PC10: 10/22-10/25 Ch 14.1–14.5	R8: 10/21
11	October 24-30	14.6–14.7	RC11: 10/29-10/13 Ch 14.8-14.12	PC11: 10/29-11/1 Ch 14.6–14.7	R9: 10/28 Exam Review
	<i>October 29</i>	<i>Fall Break – No Class</i>			
12	October 31-November 6	14.8–14.12	RC12: 11/5-11/7 Ch 15.1-15.4, 15.6	PC12: 11/5-11/8 Ch 14.8–14.12	R10: 11/4

	<b>November 2</b>	<b>Test 3 (Ch 13, 14.1-14.7, 17.8-17.9)</b>			
13	November 7-13	15.1–15.4, 15.6	RC13: 11/12-11/14 16.1-16.3, Redox Review	PC13: 11/12-11/15 15.1–15.4, 15.6	R11: 11/11
14	November 14 - 20	16.1-16.3, Review of redox reactions	RC14: 11/19-11/22 Ch18.1-18.4, 18.7-18.8	PC14: 11/19-11/22 Ch 16.1-16.3, Review of redox reactions	R12: 11/18 Exam Review
15	November 21-23	18.1-18.2	No RC	No PC	11/25 Not Meeting
	<i>November 24 - 26</i>	<i>Thanksgiving Holiday</i>			
16	November 28-December 4	18.3–18.4, 18.7-18.8	RC15: 12/3-12/5 Ch 19.1-19.4, 19.6-19.7	PC15: 12/4-12/7 Ch 18.1-18.4, 18.7-18.8	R13: 12/2
	<b>November 30</b>	<b>TEST 4 (Ch 14.8-14.12, 15, 16, review of redox reactions, 18.1-18.2)</b>			
17	December 5-7	19.1-19.4, 19.6-19.7 Omit Geiger counter	No RC	No PC	Not meeting
	<b>Wednesday, December 15 7:00-8:50</b>	<b>FINAL EXAM</b> <b>Full Term ACS Standardized Exam</b>			