



Course Snapshot

General Chemistry II for Science Majors CHEM 1420 003

Term: 2026 Fall

Modality: In Person

Meeting Information: TR, 09:35AM-10:55AM, SAGE 230

Instructor Information

Name: Stephanie Liu

Preferred Name: Dr. Liu

UNT Email Address: Stephanie.Liu@unt.edu

Office Hours and Location

T/Th 12:45 - 2:15 PM @ CHEM272, or by appointment on [Zoom](#).

Office or Department Phone Number: 9402494891

Preferred Contact Method: stephanie.liu@unt.edu, please indicate you are in Chem 1420.003 in your email because I teach multiple courses and multiple sections. If you don't remember your section number, then just tell me you are in Chem1420 an the lecture time.

Expected Response Time: During busy times, my inbox becomes rather full, so if you contact me and do not receive a response within two business days, please send a follow up email. A gentle nudge is always appreciated.

Course Description

1420(1312). General Chemistry II for Science Majors. 3 hours.(3;0;1*).

Thermodynamics, reaction rates, equilibrium, acid/base chemistry, electrochemistry, radioactivity and nuclear reactions. Prerequisites(s) : "C" or better in CHEM 1410, CHEM 1412, or CHEM 1413, or consent of

department. ***This hour is a problem-solving session.**

Course Structure

Lecture: T/Th 9:35 – 10:55 AM @ SAGE 230

Recitations: Tue. 2 – 2:50 PM @CHEM 106

All course materials are posted on Canvas in Chem 1420.003, including recitation material. You do NOT need to purchase textbooks or homework programs for this course. All assignments are given in the form of Canvas quizzes and are submitted online in Canvas.

All course contents are distributed into 26 lectures. In the weekly modules on Canvas, there are two lectures posted per week, or only one lecture posted if there is a lecture exam on Thur. of that week. In each posted lecture, the learning outcomes, the lecture PPT in a PDF, a pre-recorded lecture, a link to the homework quiz of that lecture and a link to the corresponding section in the etext are provided.

There is one homework quiz for each of the 26 lectures. In total, there are 26 homework quizzes due on every Tue. or Thur. at the end of the day when the lecture is given.

There is a recitation session on Tue. where you can work on a recitation quiz to review the material covered on Tue of the week and Thur of the previous week. In total, there are 15 recitation quizzes as weekly reviews, due on Wed.

There is no late penalty if you submit any homework or recitation quiz after the due date. I set due dates as reminders for you to stay on track for the course. However, no assignment can be submitted after 11:59 PM on the reading day.

There are four lecture exams and the lowest one is dropped automatically by the system. The overall percentage you see in your Canvas gradebook is the true grade after dropping the lowest lecture exam.

The final exam is cumulative and cannot be dropped.

Instructor Welcome and Course Orientation

Dear All,

Welcome to Chem 1420! This is Dr. Liu, and I'm looking forward to working with you this semester. All course material has been posted on Canvas in this course shell, Chem1420.003, including recitation material. Please read the syllabus by

clicking on "Simple Syllabus" in the course navigation menu on Canvas to learn the course policies.

You do NOT need to purchase any textbook or any homework program for my course.

Please go through all course material in the order they are posted on Canvas.

Make sure to mark your calendar for the five exam dates. A practice exam is provided for each exam as a study guide, which included questions that are on the same topics as those in the real exams. Practice exams are not for credit, just for self-evaluation.

If you would like to request a letter of recommendation, I prefer you meet with me briefly to tell me something about yourself. If you merely send me an email to request a recommendation letter, I can only look up your grade in Canvas to include in the letter, which might not be an ideal letter for you.

Please feel free to let me know if you have any questions! I'm looking forward to a great semester working with you!

Dr. Liu

Learning Outcomes and Alignment

Upon successful completion of this course, you will be able to (numbered in order of presentation):

I. Review Enthalpy

- 1. Describe what internal energy is**
- 2. Describe what enthalpy is**
- 3. Describe what enthalpy of reactions is**
- 4. Apply Hess's law to calculate enthalpy of reactions**
- 5. Describe what standard states are**
- 6. Describe what formation reactions is**
- 7. Determine standard reaction enthalpy with standard formation enthalpy**

II. Thermodynamics

1. Entropy
 - a. Compare entropy according to volume
 - b. Compare entropy according to temperature
 - c. Compare entropy according to molar mass
 - d. Compare entropy according to phase change
 - e. Compare entropy after mixing
 - f. Compare entropy after chemical reactions
2. The second law of thermodynamics
 - a. Predict spontaneity based on the change in entropy of the universe
3. The third law of thermodynamics
 - a. Explain why the molar entropies of any elements or compounds are positive values.
 - b. Calculate the standard entropy change of reactions.
4. Gibbs free energy
 - a. Calculate the standard free energy change of reactions at 298 Kelvins according to the standard free energy of formation
 - b. Calculate the standard free energy change of reactions at any temperature according to the standard enthalpy change of the reaction and the standard entropy change of the reaction
5. Spontaneity
 - a. Predict spontaneity according to the sign of enthalpy change, the sign of entropy change and the absolute temperature
 - b. Calculate the temperature at which the system is at equilibrium under standard conditions.

III. Solutions

1. Electrolytes
 - a. Identify strong electrolytes.
 - b. Identify weak electrolytes.
 - c. Identify nonelectrolytes.
2. Convert between various units of solution concentrations
 - a. Calculate molality
 - b. Calculate mole fraction
 - c. Calculate ppm
 - d. Convert between mass percent and molality or molarity
3. Colligative properties
 - a. Calculate vapor pressure when solute is nonvolatile
 - b. Calculate vapor pressure when solute is volatile
 - c. Calculate boiling point elevation by nonelectrolytes
 - d. Calculate boiling point elevation by electrolytes
 - e. Calculate freezing point depression by nonelectrolytes
 - f. Calculate freezing point depression by electrolytes

IV. Equilibrium

1. What are chemical equilibria
 - a. Explain that reactions reach chemical equilibrium when forward reaction rate equals reverse reaction rate.
 - b. Explain why the concentration of each reactant/product stops changing when reactions reach chemical equilibrium.
 - c. Explain why a reaction can reach equilibrium from either the forward or reverse direction.
2. The nature of equilibrium constant
 - a. Explain why equilibrium constant is affected by temperature, but not by concentrations.
 - b. Relate equilibrium constant to the standard free energy change of the reaction.
3. The form of equilibrium constant
 - a. Write the expression of K for homogeneous equilibria
 - b. Relate K_p to K_c for gaseous equilibria
 - c. Write the expression of K for heterogeneous equilibria
 - d. Manipulate K according to how equations are manipulated
4. Equilibrium calculations
 - a. Calculate K or Q according to their mass action expressions.
 - b. Calculate K by ICE approach
 - c. Calculate equilibrium concentrations by ICE approach
5. Direction of spontaneity
 - a. Determine the direction of spontaneity by comparing Q with K
6. Le Chatelier's principle
 - a. Identify the changes that can stress a system out of equilibrium
 - b. Predict how a system restore equilibrium when Q changes
 - c. Predict how a system restore equilibrium when K changes

V. Solubility equilibria

1. Solubility
 - a. Write the expression of K_{sp}
 - b. Convert between K_{sp} and solubility
 - c. Calculate solubility under common ion effect
2. Precipitation
 - a. Determine if precipitation occurs by comparing Q with K_{sp}

VI. Acid-base equilibria

1. pH and pOH
 - a. Concert between hydronium ion concentration and hydroxide ion concentration
 - b. Concert between ion concentration and pH/pOH

- c. Convert between pH and pOH
 - d. Calculate pH of strong diprotic base solution
- 2. Bronsted-Lowry theory and Lewis theories
 - a. Identify Bronsted-Lowry acids
 - b. Identify Bronsted-Lowry bases
 - c. Identify conjugate pairs
 - d. Identify amphoteric species
 - e. Identify Lewis acids and bases
- 3. Hydrolysis of salts
 - a. Identify neutral salts
 - b. Identify acidic salts
 - c. Identify basic salts
- 4. Relative strength of acids
 - a. Compare the strength of acids or bases according to the values of K_a or K_b
 - b. K_a of an acid = K_w / K_b of its conjugate base
 - c. Compare the strength of binary acids
 - d. Compare the strength of ternary acids
- 5. Ionization calculations
 - a. Compare the acidity of solutions according to K_a
 - b. Calculate pH of a weak acid/base solution
 - c. Calculate percent ionization
- 6. Polyprotic acids
 - a. Simplify calculation of the pH of a polyprotic acid solution based on the stepwise ionization mechanism.
 - b. Simplify calculation of the concentration of conjugate bases of a polyprotic acid due to its stepwise ionization.
- 7. Buffers
 - a. Identify buffers.
 - b. Calculate pH of buffers.
 - c. Compare buffer capacities.
- 8. Titrations
 - a. Find equivalence point.
 - b. Calculate pH before equivalence point of strong-strong titrations.
 - c. Identify titration curves.

VII. Electrochemistry

- 1. Redox chemistry
 - a. Identify what is reduced/oxidized
 - b. Identify what is reducing/oxidizing agent
- 2. Balance redox reactions according to half-reaction method
 - a. Balance aqueous redox reactions under acidic conditions
 - b. Balance aqueous redox reactions under basic conditions
- 3. Galvanic cells

- a. Describe the function of anodes
 - b. Describe the function of cathodes
 - c. Describe the function of salt bridges
 - d. Describe the function of outer circuit
- 4. Cell notations
 - a. Given cell notation, identify what's reduced/oxidized
 - b. Given a redox reaction equation, write the cell notation
- 5. Standard cell potential and standard electrode potential
 - a. Calculate standard cell potential according to standard electrode potential
 - b. Predict spontaneity under standard conditions according to standard cell potential
 - c. Compare strength of reducing/oxidizing agent according to standard electrode potential
 - d. Choose a metal for cathodic protection
- 6. Cell potential and redox spontaneity
 - a. Relate the sign of standard cell potential to the range of K or the sign of standard free energy change of the reaction
 - b. Calculate standard free energy change of reactions according to standard cell potentials
 - c. Calculate K according to standard cell potential
 - d. Relate the sign of cell potential to the sign of free energy change of the reaction or redox spontaneity
 - e. Apply Nernst equation to calculate cell potential

VIII. Kinetics

- 1. What is reaction rate
 - a. Calculate average reaction rate
 - b. Convert between expressions of reaction rate with different substances according to reaction stoichiometry
- 2. Rate law
 - a. Determine rate law
 - b. Derive units of rate constant according to overall reaction orders
 - c. Calculate how reaction rate changes when concentrations change
- 3. Integrated rate law
 - a. Calculate according to Zero-order integrated rate law
 - b. Calculate according to first-order integrated rate law
 - c. Calculate according to second-order integrated rate law
- 4. Collision theory
 - a. Relate activation energy to reaction rate
 - b. Relate activation energy to enthalpy change of the reaction
 - c. Use collision theory to explain why temperature affects reaction rates
 - d. Use collision theory to explain why concentrations affects reaction rates

5. Reaction mechanisms
 - a. Identify the number of elementary steps, the number of intermediates, the number of transition states, the rate-limiting step, and whether the reaction is exothermic or endothermic according to **reaction profile**.
 - b. Given a reaction mechanism, derive overall reaction equation
 - c. Given a reaction mechanism, identify reaction intermediates
 - d. Given a reaction mechanism, determine rate law
6. Catalysis
 - a. Explain how catalysis works
 - b. Given a reaction mechanism, identify catalysts

IX. Nuclear chemistry

1. Nuclear structure and stability
 - a. Describe nuclear structure
 - b. Describe band of stability
2. Nuclear reactions
 - a. Compare nuclear reactions with chemical reactions
 - b. Balance nuclear reactions
3. Nuclear decay
 - a. Balance nuclear decay equations
 - b. Apply first order kinetics of nuclear decay to do radiometric dating

General Education Core Outcomes

The UNT Core Curriculum serves as general education for all undergraduate degree programs. In this core course, students will gain foundational knowledge and skills appropriate to the core component area of **LIFE AND PHYSICAL SCIENCES**. Designated course assignments have been designed to assess the relevant core objectives:

- Students will analyze, evaluate, and synthesize information from multiple sources to develop evidence-based conclusions and solve complex problems using critical and creative thinking. (Critical Thinking)
- Students will develop, interpret, and communicate ideas through clear written, oral, and visual communication that is appropriate for the intended audience and purpose. (Communication Skills)

- **Students will interpret, analyze, and apply empirical evidence and quantitative data to draw informed, accurate, and well-supported conclusions. (Empirical and Quantitative Skills)**
- **Students will collaborate effectively with others by contributing to shared goals, considering diverse perspectives, and demonstrating respectful and productive interpersonal skills. (Teamwork)**

Course Materials

Chemistry: Atoms First

Publisher: OpenStax

Edition: 2nd Edition

Cost Notes

Free etext in web view and PDF

Notes

The web view is recommended when you are online, because the embedded hyperlinks work seamlessly on any device. The PDF is for you to browse when you are offline.

URL: <https://openstax.org/details/books/chemistry-atoms-first-2e>

Course-Specific Technology

All course materials are posted on Canvas and all assignments are submitted in Canvas. Hence, **a computer** and **internet access to Canvas** is mandatory.

Lecture attendance is taken according to your responses to iClicker questions during lectures. Please bring a device that can run **iClicker Student App** to each class, such as a smartphone, a laptop, and etc.

You will also need **a scientific calculator** without graphing capability. Most common models like TI 30X IIS or Casio FX 300ES Plus are \$15-\$25. You can find them on Amazon, Walmart, Target, Staples, or a campus bookstore.

I will provide scantrons, the periodic table of elements and a formula sheet at all five exams.

You need to bring a **pencil**, an **eraser**, a scientific calculator and **your 8-digit student ID** to all five exams.

Major Assignments and Assessments

Exams	Scope	Date	Location	# of questions	Time allowed
Exam 1	Lecture 1-7	9/10 Thur. 9:35 – 10:35 AM	Sage 230	20	60 mins
Exam 2	Lecture 8-13	10/08 Thur. 9:35 – 10:35 AM	Sage 230	20	60 mins
Exam 3	Lecture 14-19	10/29 Thur. 9:35 – 10:35 AM	Sage 230	20	60 mins
Exam 4	Lecture 20-26	12/03 Thur. 9:35 – 10:35 AM	Sage 230	20	60 mins
Final Exam	Lecture 1-26	12/10 Thur. 8:00 - 10:00 AM	Sage 230	50	120 mins

There are four **lecture exams**. Canvas automatically drops the lowest. The remaining three lecture exams each weigh 15%.

Final exam is cumulative. It weighs 15%, the same as one lecture exam.

Homework Quizzes

One homework quiz is provided for each of the 26 lectures. Three attempts are given and there is no time limit on any attempt. Each homework quiz is due at the end of day in which the lecture is given. However, there is **no** late penalty. If you submit a quiz after the due date, because the due dates are used as a reminder for you to stay on schedule for this course. Some homework quizzes contain different questions in each attempt, while others contain the same questions in each attempt. If a homework quiz contains the **same** questions in each attempt. The key is shown after the last attempt. If a homework quiz

contains **different** questions in each attempt. The key is shown after each attempt. Homework weighs 20%.

Recitation Quizzes

Each recitation quiz reviews the material covered on Tue of the week and Thur of the **previous** week. A recitation session is offered on Tue by graduate TAs. During the recitation sessions, you are highly encouraged to work in groups and reach out to the graduate TAs when you have questions. You have only one attempt at each quiz. If it's not finished by the end of the recitation session, you do NOT have to submit the quiz. You can close the webpage and resume when you open the quiz again. Recitation quizzes are due on Wed. The key will only be shown 10 minutes after the quizzes are due. When you see the key, an explanation of the key is provided for some of the questions. Recitation quizzes weigh 10%.

Note that although there is no late penalty, no homework or recitation quiz can be submitted after 11:59 PM on the reading day.

Grading and Feedback

Assignment Groups	Group Weight
Lecture Exams (drop the lowest)	45%
Final Exam	15%
Lecture Attendance	10%
Homework	20%
Recitation Quizzes	10%
Total	100%

How to calculate your overall grade

Your overall grade is a weighted average of the percentage you get on each type of assignment. When you multiply the percentage you get on a type of assignment by the weight of the group, the result is the percentage points you get on this group of assignment. When you sum up the percentage points you get on each group, it is the overall percentage you get on this course.

For example, if Michael received 85% on lecture exams, 75% on final exam, 95% on lecture attendance, 95% on homework, 90% on recitation quizzes, the overall percentage Michael got in this course would be calculated as follows.

$$85\% * 45\% + 75\% * 15\% + 95\% * 10\% + 95\% * 20\% + 90\% * 10\% = 87.00\%$$

Grading Scale

A: 90% - 100%

B: 80% - 89%

C: 70% - 79%

D: 60% - 69%

F: 0% - 59%

I include two decimal places in the percentage number when I assign letter grades and look for a natural break when I decide on the cut-off value. In the following series of numbers - 90.00, 89.99, 89.89, 89.79, 89.49, 89.39, 89.29 - the natural break is at 89.79/89.49. Hence, in this example 89.79 and above gets an A.

Note that these numbers are just given as an example. It does **NOT** mean that the cut off value between A and B for this semester is 89.79.

To be fair to everyone, I won't reply to email requests to bump up grades.

Course Schedule

Date	Assignment Name	Type	Points
8/18/26	Homework 01	Quiz	4
8/19/26	Recitation 1_Lecture 1	Quiz	4
8/20/26	Homework 02	Quiz	10

Date	Assignment Name	Type	Points
8/25/26	Homework 03	Quiz	6
8/26/26	Recitation 2_Lecture 2-3	Quiz	9
8/27/26	Homework 04	Quiz	5
9/1/26	Homework 05	Quiz	12
9/2/26	Recitation 3_Lecture 4-5	Quiz	10
9/3/26	Homework 06	Quiz	4
9/8/26	Homework 07	Quiz	12
9/9/26	Recitation 4_Lecture 6-7	Quiz	8
9/9/26	Practice Exam 1	Quiz	0
9/10/26	Exam 1	Assignment	100
9/15/26	Homework 08	Quiz	10
9/16/26	Recitation 5_Lecture 8	Quiz	6
9/17/26	Homework 09	Quiz	6
9/22/26	Homework 10	Quiz	3
9/23/26	Recitation 6_Lecture 9-10	Quiz	8

Date	Assignment Name	Type	Points
9/24/26	Homework 11	Quiz	4
9/29/26	Homework 12	Quiz	7
9/30/26	Recitation 7_Lecture 11-12	Quiz	8
10/1/26	Homework 13	Quiz	8
10/6/26	Homework 14	Quiz	8
10/7/26	Recitation 8_Lecture 13	Quiz	4
10/7/26	Practice Exam 2	Quiz	0
10/8/26	Exam 2	Assignment	100
10/13/26	Homework 15	Quiz	9
10/14/26	Recitation 9_Lecture 14-15	Quiz	10
10/15/26	Homework 16	Quiz	11
10/20/26	Homework 17	Quiz	9
10/21/26	Recitation 10_Lecture 16-17	Quiz	8
10/22/26	Homework 18	Quiz	13
10/27/26	Homework 19	Quiz	13

Date	Assignment Name	Type	Points
10/28/26	Recitation 11_lecture 18-19	Quiz	12
10/28/26	Practice Exam 3	Quiz	0
10/29/26	Exam 3	Assignment	100
11/3/26	Homework 20	Quiz	5
11/4/26	Recitation 12_Lecture 20	Quiz	5
11/5/26	Homework 21	Quiz	8
11/10/26	Homework 22	Quiz	14
11/11/26	Recitation 13_Lecture 21-22	Quiz	17
11/12/26	Homework 23	Quiz	9
11/17/26	Homework 24	Quiz	11
11/18/26	Recitation 14_Lecture 23-24	Quiz	12
11/19/26	Homework 25	Quiz	5
12/1/26	Homework 26	Quiz	10
12/2/26	Recitation 15_Recitation 25-26	Quiz	6
12/2/26	Practice Exam 4	Quiz	0

Date	Assignment Name	Type	Points
12/3/26	Exam 4	Assignment	100
12/9/26	Practice Final Exam	Quiz	0
12/10/26	Final Exam	Assignment	100

Course Calendar

In the following table, the assignments due on the corresponding day are shown. “H” stands for homework quizzes. “R” stands for recitation quizzes. “E” stands for lecture exams.

	Mon.	Tue.	Wed.	Thur.	Fri.
Week 1		H1	R1	H2	
Week 2		H3	R2	H4	
Week 3		H5	R3	H6	
Week 4		H7	R4	E1	
Week 5		H8	R5	H9	
Week 6		H10	R6	H11	
Week 7		H12	R7	H13	
Week 8		H14	R8	E2	
Week 9		H15	R9	H16	
Week 10		H17	R10	H18	
Week 11		H19	R11	E3	
Week 12		H20	R12	H21	
Week 13		H22	R13	H23	
Week 14		H24	R14	H25	
Week 15	Thanksgiving Holiday				
Week 16		H26	R15	E4	
Week 17				Final at 8-10 AM	

Authorized Absences Policy

An absence will be excused by the university for: a. religious holy day, including travel for that purpose; b. participation in an official university function; c. required military service, including travel for that purpose; d. pregnancy and parenting under Title IX; and e. when the University is officially closed.

For more details and procedures regarding UNT Authorized Absences, please see [Policy 06.039](#).

Absences that do not fall under Title IX, Required Military Service, and Official University Absences (religious holy days, participation in an official university function, and when the University is officially closed), are deemed a matter between the student and their faculty member. If the absence is due to an illness or extenuating circumstance that exceeds 5 consecutive days, the faculty member may request for the student to provide documentation through the Dean of Students' office.

Course Level Absence Practice

Excusable absence includes [recognized religious holy days](#), participation in official university functions such as student athlete events, pregnancy and parenting, required military service, and medical or other emergencies.

Absences at lectures or lecture exams are only excused if it is an **excusable absence** as described above **and** with **written proof**. A make-up test can be scheduled with the graduate TA for an excused absence at a lecture exam.

Absences at lectures or exams because you forgot about it, remembered the wrong date, overslept, were too tired or too busy to take it, **cannot** be excused.

Merely showing up in class does not count as attendance, submitting answers through iClicker does. Your answers do not have to be correct. As long as you submit iClicker answers while **physically being present in the classroom**, you will get attendance credit. Everyone can have up to **two unexcused absences without penalty**. Attendance weigh 10%.

You do **not** need to request extensions on any homework or recitation quizzes because there is **no late penalty** when you submit an assignment after the due

date. However, no assignment can be submitted after 11:59 PM on the reading day.

UNT Academic Integrity Policy

According to [UNT Policy 06.003](#), Student Academic Integrity, academic dishonesty occurs when students engage in behaviors including, but not limited to cheating, fabrication, facilitating academic dishonesty, forgery, plagiarism, and sabotage. A finding of academic dishonesty may result in a range of academic penalties or sanctions ranging from admonition to expulsion from the University.

Course Specific Academic Integrity Practice

There are two versions of tests at each of the five exams. Two students will share a desk at an exam. The colors of tests on the same desk must be different, otherwise I have to ask you to either change your test version or change your seat.

Everyone needs to turn off your cell phone and place it at the upper right corner of your work space on your desk during an exam.

If you need to go to restrooms during an exam, you need to leave your cell phone with me, and leave anything in your pockets either with me or on your desk.

AI Use Practice

In this course, the use of GenAI tools is limited as directed by the instructor. Any additional use requires explicit permission, proper citation, and authentic student work.

Course Level Practices

You may use AI to assist you in learning the course material. However, using AI

in completing assignments or even exams are strictly prohibited. The first offense results in zero grade in the assignment and exam. The second offense results in an F grade for the course.

Student Success Guidance

All course contents are distributed into 26 lectures. In each Canvas page titled “Lecture XX”, a PDF of the lecture notes, a homework quiz, a pre-recorded lecture and the link to the corresponding section in the free e-textbook are embedded. After every two lectures, a recitation quiz is posted to review the important topics covered in the previous two lectures.

I recommend you follow the link to read the sections in the e-text before watching the pre-recorded lecture. Print out the lecture notes to make it easier for you to take notes while watching the pre-recorded lectures. Take the homework quiz after you watch the pre-recorded lecture to gauge your understanding. Review the material by taking the recitation quizzes at the recitation sessions and reach out to the graduate TA for assistance.

When you have questions, please reach out for assistance by attending my office hours, the graduate TAs’ office hours or [CRC](#) (tutoring service provided by graduate students in chemistry department at CHEM 231).

PLEASE PACE YOURSELF ACCORDING TO THE DUE DATES OF 26 HOMEWORK QUIZZES TO GO THROUGH THE COURSE MATERIAL.

The practice exams contain the same number of questions on the same topics and the same difficulty levels as the questions in real exams. You are supposed to use the practice exams as a study guide to prepare for exams. After you work through the practice exams, make sure you can correct your mistakes. You can do so by re-watching the corresponding recorded lectures, attending Dr. Liu’s or graduate TA’s office hours, or going to CRC tutoring center. You have three attempts on each practice exam. Each attempt has the same time limit as real exams. The key is shown after each attempt.

Academic Support and Student Services

Technology Support

Part of working in the online environment involves managing the inconveniences and frustrations that can arise when technology breaks down or does not perform as expected. Here at UNT, we have a [Student Help Desk](#) that you can contact for help with Canvas or other technology

issues:

- Phone: 940-565-2324
- Email: helpdesk@unt.edu
- Current list of [Student Help Desk hours](#)

Academic Support Services

- The [UNT Academic Resource Center](#) provides links to the bookstore, registration and advising information, tuition information, financial aid, and more.
- The [UNT Academic Success Center](#) offers academic support services and free individual tutoring.
- [UNT Writing Lab](#)
- [UNT Libraries](#)

Student Services

- [Counseling and Testing Services](#)
- [Student Affairs Care Team](#)
- [Student Health and Wellness Center](#)
- [Student Legal Services](#)
- [UNT Food Pantry](#)

Civil Discourse

As a leading public university, the University of North Texas has a fundamental responsibility to create enduring value for the public good. The fulfillment of our mission as a university depends upon the free exchange of ideas in the pursuit of knowledge. We bring these commitments into action by centering civil discourse in our culture and curriculum. We define civil discourse as the practice of constructive dialogue to broaden understanding, grounded in our shared values and deep respect for each other's potential. By committing to this practice, we seek to equip every student with skills and mindsets to engage, contribute, and lead—at UNT and throughout your lives.

My role as an instructor is to introduce you to different ideas and scholarship and facilitate discussions that are credible, open, respectful, and relevant to this course. Our class brings together individuals with different backgrounds, experiences, and viewpoints. You may disagree

with the views presented, and others may disagree with your views. But, you should expect to be listened to with respect and evaluated fairly based on the learning objectives of this course. Even when you disagree, engaging with other points of view can help you better understand both the issue at hand and your own perspective. While we may engage in vigorous debate about competing ideas, speech that violates the Student Code of Conduct, including speech that harasses a specific individual or disrupts the course is not acceptable and works against our educational mission.

University Policies

ADA Accommodation Statement: UNT makes reasonable academic accommodation for students with disabilities. Students seeking accommodation must first register with the Office of Disability Accommodation (ODA) to verify their eligibility. If a disability is verified, the ODA will provide a student with an accommodation letter to be delivered to faculty to begin a private discussion regarding one's specific course needs. Students may request accommodations at any time, however, ODA notices of accommodation should be provided as early as possible in the semester to avoid any delay in implementation. Note that students must obtain a new letter of accommodation for every semester and must meet with each faculty member prior to implementation in each class. For additional information see the ODA website at disability.unt.edu.

Emergency Notification & Procedures: UNT uses a system called Eagle Alert to quickly notify students with critical information in the event of an emergency (i.e., severe weather, campus closing, and health and public safety emergencies like chemical spills, fires, or violence). In the event of a university closure, please refer to the UNT Learning Management System (LMS) for contingency plans for covering course materials.

Retention of Student Records: Student records pertaining to this course are maintained in a secure location by the instructor of record. All records such as exams, answer sheets (with keys), and written papers submitted during the duration of the course are kept for at least one calendar year

after course completion. Course work completed via the Blackboard online system, including grading information and comments, is also stored in a safe electronic environment for one year. Students have the right to view their individual record; however, information about student's records will not be divulged to other individuals without proper written consent. Students are encouraged to review the Public Information Policy and the Family Educational Rights and Privacy Act (FERPA) laws and the University's policy. See UNT Policy 10.10, Records Management and Retention for additional information.

Acceptable Student Behavior: Student behavior that interferes with an instructor's ability to conduct a class or other students' opportunity to learn is unacceptable and disruptive and will not be tolerated in any instructional forum at UNT. Students engaging in unacceptable behavior will be directed to leave the classroom and the instructor may refer the student to the Dean of Students to consider whether the student's conduct violated the Code of Student Conduct. The University's expectations for student conduct apply to all instructional forums, including University and electronic classroom, labs, discussion groups, field trips, etc. The Code of Student Conduct can be found at deanofstudents.unt.edu/conduct.

Access to Information – Eagle Connect: Students' access point for business and academic services at UNT is located at: my.unt.edu. All official communication from the University will be delivered to a student's Eagle Connect account. For more information, please visit the website that explains Eagle Connect and how to forward e-mail: eagleconnect.unt.edu/.

Student Evaluation Administration Dates: Student feedback is important and an essential part of participation in this course. The student evaluation of instruction is a requirement for all organized classes at UNT. Students will receive an email from "UNT SPOT Course Evaluations via IASystem Notification" (no-reply@iasystem.org) with the survey link. Students should look for the email in their UNT email inbox. Simply click on the link and complete the survey. Once students complete the survey they will receive a confirmation email that the survey has been submitted. For additional

information, please visit the SPOT website at spot.unt.edu or email spot@unt.edu.

Survivor Advocacy: UNT is committed to providing a safe learning environment free of all forms of sexual misconduct, including sexual harassment sexual assault, domestic violence, dating violence, and stalking. Federal laws (Title IX and the Violence Against Women Act) and UNT policies prohibit discrimination on the basis of sex, and therefore prohibit sexual misconduct. If you or someone you know is experiencing sexual harassment, relationship violence, stalking, and/or sexual assault, there are campus resources available to provide support and assistance. UNT's Survivor Advocates can assist a student who has been impacted by violence by filing protective orders, completing crime victim's compensation applications, contacting professors for absences related to an assault, working with housing to facilitate a room change where appropriate, and connecting students to other resources available both on and off campus. The Survivor Advocates can be reached at SurvivorAdvocate@unt.edu or by calling the Dean of Students Office at 940-565-2648. Additionally, alleged sexual misconduct can be non-confidentially reported to the Title IX Coordinator at oeo@unt.edu or at (940) 565 2759.

Pregnancy Modifications Under Title IX and Parenting Resources: UNT is committed to supporting students who may need pregnancy and parenting modifications in compliance with Title IX. If you are a pregnant student or have a pregnancy related condition, please visit report.unt.edu and complete the 'Request Pregnancy/Parenting Modifications' form. Parenting students who may need resources can seek support and guidance from the Dean of Students and the Eagle Engagement Center. [Pregnant and Parenting Students Policy number 16.008](#).

Copyright Notice: Materials used in connection with this course may be subject to copyright protection. Materials may include, but are not limited to: documents, slides, images, audio, and video. Materials in this course website are only for the use of students enrolled in this course, for

purposes associated with this course, and may not be retained for longer than the class term. Unauthorized retention, duplication, distribution, or modification of copyrighted materials is strictly prohibited by law. For more information, visit the [UNT Policy Office](#), or [Copyright.gov](#).

Web Accessibility & Privacy: Please find the web accessibility and privacy statements for UNT and Canvas.

UNT

- [Web Accessibility Policy](#)
- [Privacy Statement](#)

Canvas/Instructor

- [Accessibility Statement](#)
[Privacy Policy](#)

University Resources

Chemistry Resource Center (CRC)

The Chemistry Resource Center (CRC) provides free tutorial instruction to students enrolled in undergraduate chemistry courses. The CRC is staffed by highly qualified chemistry graduate students.

CRC is located at CHEM 231 and open every weekday from 8 AM - 6 PM, except for Thursday, which closes at 3-4:30 PM for the Seminar.

For questions or comments about the CRC, please contact chemistry@unt.edu or 940-565-3524. You can check out the schedule at <https://chemistry.unt.edu/undergraduate/instructional-resources.html>