

Instructor Information

Dr. Elizabeth Skellam (e-mail: elizabeth.skellam@unt.edu)

Office: SRB 130

Office Hours: see below

Connect with me through email and/or by attending office hours. 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, Structure, and Objectives

Session	Days	Time	Location
CHEM 1420.002 (in-person)	M/W/F	1:25 pm – 2:15 pm	CHEM 106
CHEM 1420.202 (in-person)	W	3:35 pm – 4:25 pm	CHEM 106
Office Hour	W	2:30 pm – 3:30 pm	SRB 130
	By appointment (please e-mail in advance to arrange a time)		SRB 130

Pre-requisite: CHEM 1410 with C or better

Co-requisite: CHEM 1420.202 (recitation)

Learning Objectives: Students in this course will demonstrate a functional understanding of the following topics:

- Physical properties of solutions and the chemical processes behind solution formation
- Reaction rates and factors that impact reaction rates
- Chemical equilibrium and determination of reactant and product concentrations at equilibrium
- Acid-base properties of weak acids, weak bases, salts and buffers
- Equilibrium of aqueous chemical reactions
- Free energy and the relationship with spontaneity and equilibrium
- The role of electrical potential in chemical reactions
- The processes and kinetics of nuclear decay

Required/Recommended Materials

1. Textbook: Chemistry: Atoms First, 2nd Ed., Openstax, <https://openstax.org/details/books/chemistry-atoms-first-2e>
2. A scientific non graphing calculator
3. Canvas is your single log-on to access lecture notes, assignments, grades.
 - Canvas technical assistance: UNT Help Desk
<http://www.unt.edu/helpdesk/index.htm> Email: helpdesk@unt.edu Phone: 940.565-2324

4. An electronic device (phone, iPad, computer, etc.) that can access Canvas before or during class.

Chemistry Resources

More information about CRC and CCIL can be found at this website (<https://chemistry.unt.edu/undergraduate-program/instructional-resources>).

Chemistry Resource Center (CRC): A dedicated Chemistry tutoring lab, staffed by chemistry graduate students.

The Computational Chemistry Instructional Laboratory (CCIL): CCIL provides computer access to all undergraduate and graduate students enrolled in UNT chemistry courses. Computers are to be used only for chemistry related work and instruction. The CCIL is staffed by chemistry graduate students knowledgeable in the area of computational chemistry.

Course Schedule

Week	Day	Date	Topic
1	M/W/F	8/17, 8/19, 8/21	Syllabus; Chapter 10: Solids and Liquids
	W	8/19	Recitation #1
2	M/W/F	8/24, 8/26, 8/28	Chapter 10: Solids and Liquids (continued) Chapter 11: Solutions and Colloids
	W	8/26	Recitation #2
3	M/W/F	8/31, 9/2, 9/4	Chapter 11: Solutions and Colloids (continued) Review of topics Exam 1: Chapters 10 – 11
	W	9/2	Recitation #3
4	W/F	9/9, 9/11	Note: No class on 9/7 due to Labor Day Chapter 12: Entropy and Gibbs energy
	W	9/9	Recitation #4
5	M/W/F	9/14, 9/16, 9/18	Chapter 12: Entropy and Gibbs energy (continued)
	W	9/16	Recitation #5
6	M/W/F	9/21, 9/23, 9/25	Chapter 13: Chemical Equilibrium
	W	9/23	Recitation #6
7	M/W/F	9/28, 9/30, 10/2	Chapter 13: Chemical Equilibrium (continued) Chapter 14: Acids and Bases
	W	9/30	Recitation #7
8	M/W/F	10/5, 10/7, 10/9	Chapter 14: Acids and Bases (continued)

			Review of topics Exam 2: Chapters 12 – 14
	W	10/7	Recitation #8
9	M/W/F	10/12, 10/14, 10/16	Chapter 15: Other Equilibria
	W	10/14	Recitation #9
10	M/W/F	10/19, 10/21, 10/23	Chapter 16: Electrochemistry
	W	10/21	Recitation #10
11	M/W/F	10/26, 10/28, 10/30	Chapter 16: Electrochemistry (continued)
	W	10/28	Recitation #11
12	M/W/F	11/2, 11/4, 11/6	Review of topics Exam 3: Chapters 15 and 16
	W	11/4	Recitation #12
13	M/W/F	11/9, 11/11, 11/13	Chapter 17: Kinetics
	W	11/11	Recitation #13
14	M/W/F	11/16, 11/18, 11/20	Chapter 17: Kinetics (continued) Chapter 20: Nuclear Chemistry Review of topics
	W	11/18	Recitation #14
Thanksgiving Break			
15	M/W		Exam 4: Chapters 16 – 17, 20 Course review; No class on 12/4 Reading Day;
	F	12/4	No class, Reading Day

The course material will be covered according to the schedule above. The topics covered are tentative and may change according to campus closures and how much material we cover in class. Students will be notified by Eagle Alert if there is a campus closing that will impact a class

(<https://policy.unt.edu/policy/15-006>).

Assessing Your Work

Every student in my class can improve by doing their own work and trying their hardest with access to appropriate resources. Students who use other people's work without citations will be violating UNT's Academic Integrity Policy. Please read and follow this important set of [guidelines for your academic success](https://policy.unt.edu/policy/06-003) (<https://policy.unt.edu/policy/06-003>). If you have questions about this, or any UNT policy, please email me or come discuss this with me during my office hours.

Four In-Term Exams

400 points

There are four 50-minute in-term exams held during lectures on the dates specified above. Each exam has 100 possible points. No Make-up exams will be given. If you have an acceptable, documented reason for missing an exam (examples include documented illness, auto accident, participation in UNT-sponsored event, observance of religious holiday), you will be allowed to replace the missed exam with your score on the final exam. You need to bring the document to Dr. Skellam within 3 days after the exam.

Final Exam

200 points

The final exam is scheduled on Wednesday, December 9th, 10:30 am ~ 12:30 pm and is a cumulative exam covering all material covered over the semester. The final exam is a coordinated exam by the university, and your score will be out of 200 possible points. The final exam is mandatory. Students who do not take the final exam will necessarily receive a failing grade in the class, regardless of other scores earned in the class.

Recitation

150 points

Recitations (CHEM 1420.202) is a mandatory course component and will be held on Wednesday from 3:35 pm to 4:25 pm (see page 2 for the dates). If you cannot attend the recitation section you should enroll in a different section. Students will be assigned to small groups to work on a set of problems that are related to the class content. There are 14 recitation sessions. If you attend the recitation and fully participate, you will receive 15 points for each session. At the end of the semester, the total will be capped at 200 points. Please be on time and stay till the end of the session. If you are more than 10 minutes late or leave more than 10 minutes early, you will receive half credit for that session. If you are more than 20 minutes late or leave more than 20 minutes early, you won't receive any credit for that session.

Homework, Class Participation, and PLTL Sessions

250 points

Homework as will be administered weekly via handouts (also available on Canvas) and must be submitted in person by the due date. In-class exercises, group discussions, individual participation, and pop-quizzes will count towards your participation grade. A Peer-led Team Learning (PLTL) program is available for our section. You sign up and agree to attend 90-minute weekly meetings with a group of students from your class. During each PLTL meeting, a peer leader will guide you to finish a worksheet. It gives students a chance to share ideas and thinking on how to solve problems. Attendance will be taken, and 1 point will be granted if you stay for more than 45 minutes, and actively participate during that time. Please note, it is not a tutoring session. More information about this program will be given in class and Canvas announcement.

Types of Assignments	Points per Item	Number of Assignments	Capped Total points	Percentage
In-term exams	100	4	400	40%
Final Exam (cumulative)	200	1	200	20%
Recitation	15	14	150	15%
Homework	15	14	150	15%
Class / PLTL Participation	10	14	100	10%
Course Total Points			1000	100%

Total Points	Letter Grade
900 - 1000	A
800 - 899	B
700 - 799	C
600 - 699	D
< 600	F

Prohibited Use: In this course, I want you to engage deeply with the materials and develop your own critical thinking skills. For this reason, the use of Generative AI (GenAI) tools e.g., Claude, ChatGPT, and Gemini etc. are not permitted. While these tools can be helpful in some contexts, they do not align with our goal of fostering the development of your independent thinking. Using GenAI to complete any part of an assignment, exam, or coursework will be considered a violation of academic integrity, as it prevents the development of your own skills, and will be addressed according to the [Student Academic Integrity policy](https://policy.unt.edu/policy/06-003) (<https://policy.unt.edu/policy/06-003>).

Attendance and Participation

Research has shown that students who attend class are more likely to be successful. You should attend every class unless you have a university excused absence such as active military service, a religious holy day, or an official university function as stated in the [Student Attendance and Authorized Absences Policy \(PDF\)](https://policy.unt.edu/policy/06-039) (<https://policy.unt.edu/policy/06-039>). If you cannot attend a class due to an emergency, please let me know. Your safety and well-being are important to me.

How to Succeed in this Course

The University of North Texas makes reasonable accommodations for students with disabilities. To request accommodations, you must first register with the Office of Disability Access (ODA) by completing an application for services and providing documentation to verify your eligibility each semester. Once your eligibility is confirmed, you may request your letter of accommodation. ODA will then email your faculty a letter of reasonable accommodation, initiating a private discussion about your specific needs in the course.

You can request accommodations at any time, but it's important to provide ODA notice to your faculty as early as possible in the semester to avoid delays in implementation. Keep in mind that you must obtain a new letter of accommodation for each semester and meet with each faculty member before accommodations can be implemented in each class. You are strongly encouraged to meet with faculty regarding your accommodations during office hours or by appointment. Faculty have the authority to ask you to discuss your letter during their designated office hours to protect your privacy. For more information and to access resources that can support your needs, refer to the [Office of Disability Access](https://studentaffairs.unt.edu/office-disability-access) website (<https://studentaffairs.unt.edu/office-disability-access>).

Supporting Your Success and Creating an Inclusive Learning Environment

Every student in this class should have the right to learn and engage within an environment of respect and courtesy from others. I encourage you to review UNT's student code of conduct so that we can all start with the same baseline civility understanding ([Code of Student Conduct](https://policy.unt.edu/policy/07-012)) (<https://policy.unt.edu/policy/07-012>).

Technical Assistance

Part of working in the online environment involves dealing with the inconveniences and frustration 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.

UIT Help Desk: [UIT Student Help Desk site](http://www.unt.edu/helpdesk/index.htm) (<http://www.unt.edu/helpdesk/index.htm>)

Email: helpdesk@unt.edu

Phone: 940-565-2324

In Person: Sage Hall, Room 130

Walk-In Availability: 8am-9pm

Telephone Availability:

- Sunday: noon-midnight
- Monday-Thursday: 8am-midnight
- Friday: 8am-8pm
- Saturday: 9am-5pm

Laptop Checkout: 8am-7pm

For additional support, visit [Canvas Technical Help](https://community.canvaslms.com/docs/DOC-) (<https://community.canvaslms.com/docs/DOC->

10554-4212710328)

Student Support Services

UNT provides mental health resources to students to help ensure there are numerous outlets to turn to that wholeheartedly care for and are there for students in need, regardless of the nature of an issue or its severity. Listed below are several resources on campus that can support your academic success and mental well-being:

- Student Health and Wellness Center (<https://studentaffairs.unt.edu/student-health-and-wellness-center>)
- Counseling and Testing Services (<https://studentaffairs.unt.edu/counseling-and-testing-services>)
- UNT Care Team (<https://studentaffairs.unt.edu/care>)
- UNT Psychiatric Services (<https://studentaffairs.unt.edu/student-health-and-wellness-center/services/psychiatry>)
- Individual Counseling (<https://studentaffairs.unt.edu/counseling-and-testing-services/services/individual-counseling>)

Other student support services offered by UNT include

- Registrar (<https://registrar.unt.edu/registration>)
- Financial Aid (<https://financialaid.unt.edu/>)
- Student Legal Services (<https://studentaffairs.unt.edu/student-legal-services>)
- Career Center (<https://studentaffairs.unt.edu/career-center>)
- Multicultural Center (<https://edo.unt.edu/multicultural-center>)
- Counseling and Testing Services (<https://studentaffairs.unt.edu/counseling-and-testing-services>)
- Pride Alliance (<https://edo.unt.edu/pridealliance>)
- UNT Food Pantry (<https://deanofstudents.unt.edu/resources/food-pantry>)

Academic Support Services

- Academic Resource Center (<https://clear.unt.edu/canvas/student-resources>)
- Academic Success Center (<https://success.unt.edu/asc>)
- UNT Libraries (<https://library.unt.edu/>)
- Writing Lab (<http://writingcenter.unt.edu/>)
- MathLab (<https://math.unt.edu/mathlab>)

