

CHEM 1062: Chemical Principles II

Fall 2023, 3 credits

T, Th 11:15a – 12:30p, 100 Smith Hall

Instructor: Prof. Aaron Massari (he/him), massari@umn.edu

Office hours: Wed 1:00p ZOOM, Thurs 1:00p-2:00p in-person 245 Smith Hall

Course site: <https://canvas.umn.edu/courses/390888>

Overview

This course covers a broad range of chemistry topics. We will start with a discussion of kinetics, reaction rates, and the equilibrium condition, including how different factors influence equilibrium. We will use our understanding of equilibrium to focus on acid-base reactions, ionic compounds, and complex ions. Then, we will explore thermodynamics and how enthalpy, entropy, and free energy relate to reaction spontaneity. Finally, we will proceed into a discussion of electrochemistry and coordination chemistry. This course, along with lab, strives to train students to understand complex issues, find credible information, analyze that information, problem-solve, and draw reasonable conclusions based on facts so that they become informed citizens and life-long learners.

During the term, students will complete weekly online homework assignments. There will be 6 Chapter Quizzes, and at the end of the course, students will complete a cumulative Final Exam

CHEM 1061/5 and 1062/6 are introductory chemistry courses with accompanying lab courses. The two courses, with labs, are together designed to prepare a student for a major in science (including chemistry and engineering) and the health sciences. Each lecture/lab pair fulfills the core physical science requirement.

Prerequisites

In order to enroll in CHEM 1062, students must have earned a grade of C- or higher in CHEM 1061, 1071H, or 1081 (or an equivalent course). If you do not meet these criteria, you should report your situation to the staff in Smith 115 at chemfaq@umn.edu immediately. They handle all registration issues pertaining to this course.

Goals

As a component of your undergraduate education at the University of Minnesota, this course will offer you the opportunity to identify, define, and solve problems, and will provide a strong foundation upon which you can build future knowledge in the chemical sciences and beyond. Because CHEM 1062 is designed to prepare students for continuing studies in chemistry, when students leave the course they should demonstrate content proficiency, the ability to solve a variety of multistep chemical problems correctly and efficiently, and time and resource management.

Course Materials

All course materials are available for purchase from U of M Bookstores in Coffman Union and St. Paul Student Center.

Required

- **Textbook and ALEKS:**¹ *Chemistry, 9th edition*, Martin Silberberg and Patricia Amateis, McGraw-Hill, 2021; You can access your E-text via the ALEKS link in our course Canvas site.
- **Access to an internet-capable computer with Google Chrome, a working webcam, and a working microphone**
- **Laminated periodic table/equation sheet:** used during quizzes and exams
- **Dry-erase marker:** used during quizzes and exams
- **Mirror or other reflective surface:** approximately 6" by 6"; used during quizzes and exams

Recommended

- **Student solutions manual:** The answers to selected end-of-chapter problems are already included in the E-text. There is a Student Solutions Manual available for purchase from the publisher and also at the UMN library, but be aware that it only has solutions (not just the answers) to the same selected problems. The TAs in the Tutor Room have limited access to all of the end-of-chapter problems if you want to check your answers there.
- **Non-programmable scientific calculator:** used when you complete homework and quizzes; a built-in calculator is also provided within ALEKS for homework assignments and within Proctorio for quizzes.

Course Websites

Lecture (CHEM 1062) Canvas site. Students registered in this course must use the Canvas site created for this class. This site is where you will find any information associated with the lecture portion of the course. It contains many resources to help you succeed in the course. You will take quizzes through Proctorio, accessed through the course Canvas site. You will find your quiz scores posted here as well, under the "Grades" link.

Lab (CHEM 1066) Canvas site. This site is where you will find your *lab* syllabus and multiple resources associated with completion of the laboratory projects. You will view your laboratory grades here, under the "Grades" link. Please note that lab is a separate, graded course that must be taken at the same time you take our lecture course.

ALEKS site. There is a link from the lecture Canvas site to the ALEKS homework system. Follow the instructions there to set up your account correctly. You can find your homework scores under the "Gradebook" link in ALEKS.

¹ This semester we will be using the 9th edition of Silberberg/Amateis' Chemistry with ALEKS. Electronic textbooks are much more cost-effective than purchasing the physical book. Your student account will be charged \$63.75 before the beginning of the semester for access. Those wishing to opt out (purchasing their textbook *and* ALEKS access elsewhere) are refunded after the drop/add period. All students who drop the course within the drop/add period will be automatically refunded.

An E-mail will be sent to all students with opt out instructions. The E-mail will have the subject line "Course Materials Charged on Your Student Account" and will come from verbasoftware.com. Sometimes the message goes to a spam or junk folder, so please be on the lookout for this message. If you have additional questions, contact UMN Bookstores directly at inclusiveaccess@umn.edu.

Grading

I want to encourage you to work hard in this class and give you many opportunities to demonstrate and apply what you are learning. You will demonstrate your proficiency in the course material through working in ALEKS (online homework) throughout the semester, your performance on Chapter quizzes, and a cumulative Final Exam. The grading breakdown is as follows:

ALEKS homework, due Thursdays	13 x 1 points =	13 points
ALEKS Full Pie		10 points
Chapter quizzes (5 of 6)	5 x 11 points =	55 points
Final Exam, Sat Dec 16		<u>22 points</u>
		100 points

Letter grades will be assigned based on the overall cumulative points earned, based on the following ranges.

Letter Grade	Percentage (or points)
A	≥ 85.00
A-	80.00 – 84.99
B+	75.00 – 79.99
B	70.00 – 74.99
B-	65.00 – 69.99
C+	60.00 – 64.99
C	55.00 – 59.99
C-	50.00 – 54.99
D	40.00 – 49.99
F	< 40.00

Please note that these are the actual points required for each letter grade. **There will be no further rounding up** of these cutoffs. For example, a 74.99 is a B, not a B+; it does not round up to a 75.00. The numbers have already been rounded up as much as they are going to be.

University grading policies and guidelines can be found at: <https://policy.umn.edu/education/gradingtranscripts>

S/N grading. If you are registered for this class on an S/N basis, a grade equivalent to C- or above on the A-F scale will be required to earn an S, and a grade equivalent to D+ or below will earn an N. You will want to talk with your academic advisor about the grading scale you select for the class – many programs and transfer courses will assume a student who earned an S means the student earned the lowest possible passing grade. Monday, September 18, 2023, is the last day to change the grading basis from A-F to S/N.

Incompletes. Students who have an excused absence from the Final Exam *and* have taken all quizzes may be eligible to earn a grade of “I” in the course. Incompletes will *not* be granted if the student is not passing based on the work up to the Final Exam. This grade is not routinely assigned, and any grade of “I” must be made up the following semester. After that time, all grades of I will become grades of F. You must fill out an Incomplete Request form (available from our Student Services staff at eric1715@umn.edu) and have it signed by me.

Withdrawals. If you decide to drop the class, you must officially withdraw from the course following the specific rules of your College. Please know that students withdrawing from the course will not have any records retained for use upon retaking the course. If you are considering withdrawing from the course for academic reasons, I urge you to come and talk with me during office hours. Your situation may not be as bad as you think it is!

ALEKS homework. There are 13 weekly assignments in ALEKS, each worth 1 point. The number of topics in each homework assignment will vary, based on each student's individual learning path within ALEKS. In the whole semester, there are 109 topics. The portion of these topics that you complete at the "learned" level or better **before Dec 16, 2023** will earn up to an additional 10 points. These homework assignments are designed to give you an opportunity to practice the course material and apply what you've learned to new problems and situations. Because assignments are available well in advance of the due date, no make-up opportunities are allowed. You are welcomed to work ahead!

Read the instructions posted in our lecture Canvas site to set up your ALEKS account correctly. **If you do not set up your account correctly, you will not get credit for your online homework.** Homework deadlines are posted on the ALEKS website and in the syllabus. Late homework is not accepted. Only in extenuating circumstances are homework extensions allowed.

Exams. There will be six (6) Chapter Quizzes held every approximately other week between **4:00 PM Thursday and 4:00 PM Friday**. The Final Exam is available **Fri Dec 15 at 4:00 PM until Sat Dec 16 at 4:00 PM** (this overlaps with our University-assigned final exam timeslot of Sat Dec 16, 8:00 a.m. – 10:00 a.m.) All exams are proctored electronically using Proctorio (see details in our Canvas site). The final exam will be comprehensive and cover all lecture material, including that presented after the last midterm exam. Failure to take the final exam (without an Excused Absence) will result in an F in the class. **No exam, including the Final Exam, may be taken on a day other than that which has been scheduled. If you have conflicts with any of the scheduled times, you should resolve them now or drop the course. The only exception is if you are registered in another UM course that conflicts with the exam time. If you have a course conflict of this type, see me on or before Friday September 8.**

Exam Format

You can take your Chapter Quizzes and Final Exam in any quiet, private or semi-private location of your choosing, as long as it has reliable, stable internet access for the duration of your Quiz. You must have your student I.D., Chem Formula sheet (which can also serve as your "whiteboard" or "scratch paper" during the exam) and/or whiteboard, calculator, and mirror at each of the Chapter Quizzes and the Final. I.D. checks will be made by the e-proctoring system. All Chapter Quizzes for this course will consist of 10-15 questions, including multiple-choice, short answer, ranking, and matching. Each Quiz is worth a maximum of 11 points. The final exam will have ~40 questions and is similar in structure to the Chapter Quizzes. The Final Exam is worth a maximum of 22 points. The exams will be proctored and graded by computer. *Make sure you understand fully how to set up your computer and prepare for e-proctoring in advance of the actual exams. **Details are provided on Canvas.*** Correct answers for exam questions will typically be released within 24 hours of the exam ending time. I am happy to discuss grading questions with students after the correct answers have been released.

Dropped Exam

Each student will automatically have their lowest midterm exam score (from Exams 1-6) dropped.

Missed quizzes. In situations of a true emergency, serious illness, or University-sponsored travel, an excused absence may be granted for a quiz. To obtain an excused absence, students must contact the instructor as soon as circumstances allow to state that the student has experienced an emergency / is ill / etc. No personal details or detailed explanations are necessary. The unweighted average of all of the student's other quiz scores but not including the dropped exam will replace the zero from the excused quiz. Only one missed quiz will be replaced in this fashion. If circumstances prevent a student from taking more than one quiz, a meeting must be scheduled immediately with the instructor to discuss any options available. Student-athletes with a travel letter who miss an exam due to University-related travel should also contact the instructor early in the semester to determine

what arrangements may be able to be made. For more information, please see: <http://policy.umn.edu/education/makeupwork>.

Extra Credit: There is no extra credit in CHEM 1062.

Expectations for Online Learning Environment

<https://communitystandards.umn.edu/know-code/online-learning-expectations>

Online “study sites” (examples: Chegg, Coursehero, etc.) have become increasingly popular and present challenges for faculty and other instructors in securing their proprietary lectures, exams, assignments, slide decks, notes, etc. Upload of instructional materials to these sites is a violation of the student conduct code. Additionally, utilizing information and/or copying work from these sites to aid them in any graded assignment (such as homework or exams) is likely a violation of the student conduct code.

Practice Problems

Successfully completing practice problems is very important in this course. In addition to the online ALEKS homework problems, I strongly encourage you to work the end-of-chapter problems listed on the last page of this syllabus. The ability to complete problems of this type is critical for success on exams.

Lectures

Content will be delivered during scheduled class time. It is recommended you skim the textbook sections prior to coming to class (see the Lecture Schedule). You are also responsible for material covered in the textbook, whether we cover it in class or not.

I’m going to miss a class. What should I do? You do not need to tell me if you are going to miss a class since I do not take attendance. If you miss a class meeting, you will need to find a classmate who is willing to share their notes with you! You are responsible for all announcements and material presented during lecture, as well as all in-class activities. I will record the audio and projected slides from class periods and post these recordings after each class. Full disclosure: the audio and video quality will be low but should be enough for you to review what was covered in class.

Calculators

Graphing and/or programmable calculators are FORBIDDEN on Chapter Quizzes or the Final Exam. Their presence during, or use on, an exam will be considered cheating. Only non-programmable calculators with limited memory will be allowed for use during Quizzes and the Final Exam. Any one-line display scientific calculator is allowed. The TI-30Xa is the suggested calculator for this and all CHEM 1XXX courses and for most introductory physics courses. The TI-30X IIS is an acceptable two-line calculator. These calculators are available in the U of M Bookstores. In addition, the Proctorio system has a built-in calculator feature that you can use during Quizzes.

How to be Successful in CHEM 1062

You are in charge of your own learning. As your instructor, I do my best to provide you with the resources to be successful, but you, as the student, must take advantage of those resources and use them effectively to learn the material. This might be a shift from your previous experiences, especially if this is one of your first college classes. But don't worry – here are some steps that you can take to help make the shift!

- Skim the textbook before attending lecture so that class is not the first time you see the material
- Engage in every lecture and take excellent notes – be present in mind and not distracted by other things
- Actively work on practice problems given during lecture
- Complete **ALL** of the suggested practice problems for each chapter
- Finish the online ALEKS homework on time
- Practice for quizzes as recommended (*check out the Help documents on Canvas for details*)
- Quickly and consistently review and correct mistakes made in your notes, practice problems, homework, and quizzes
- Ask for help and seek out resources to support your learning

You will have (and should ask) questions throughout the semester – otherwise you wouldn't be learning anything new! Critically examining and using all of your available resources *beforehand* can help you answer your questions, saving you time and energy. I strongly encourage you to fully explore the course Canvas site so that you know about all of the resources.

In general, **attending lecture and completing the online homework IS NOT ENOUGH to prepare you to do well on quizzes.** You *must* engage in the course material and practice applying the content you are learning early, often, and on your own – this is where your learning takes place! Often, problems make sense when someone else is walking through them, but when you're faced with the problem on your own, it can be overwhelming. Practicing the material on your own early and often can help you get exposure to a bunch of different ways problems can be asked so that you're able to efficiently solve the problem when you see the content on a quiz.

Time and resource management. Time and resources are ultimately limited in both the concrete and the abstract senses. This semester, you will have different pulls on your time and energy, whether it's your coursework, employment, family, personal life, extracurricular activities, etc., and **you get to decide how to manage and balance your different commitments, your time, and your resources most effectively.** Making these decisions and taking effective steps to reach your goals, though, can sometimes be overwhelming and does require practice. Managing this stress takes practice. There are a number of resources designed to help you – please reach out to any and all that might be helpful for you! A list with many of these resources is provided on Canvas under the "I Need Help!" link. Most students access resources like these at some point during their college careers.

For our class, the effectiveness of your study strategies and the amount of time and effort you spend each week engaging in course content, participating in in-class activities, working on homework, practicing course material on your own, and taking quizzes is in your control. However, **most students find that they need to rethink and reassess these strategies at some point during the semester, especially if they feel a quiz or assignment didn't go as well as expected.** In order to help you be efficient and successful in the course, including when you feel you need to choose a different approach, I've compiled a number of resources and have posted them on our course website.

Time management. In this course, you will need to practice time management by meeting the deadlines for graded activities in our course. All homework assignments are available to work on and complete from the beginning of the semester.

- Working on ALEKS homework in small, shorter sessions throughout the week and completing quizzes well before the deadline are two indications a student is successfully demonstrating time management.
- Cramming ALEKS homework into one or two long sessions or waiting until the last minute to resolve an issue (“last minute” = an hour or two before a quiz is due) suggest there are opportunities for improved time management.

Almost everyone procrastinates at one time or another, but developing strategies *now* to manage your time successfully *before* reaching a deadline will save you unnecessary stress and missed opportunities later on.

Resource management. You will practice resource management by actively seeking out and effectively using the resources you are provided. In addition to our content resources (lectures, textbook, ALEKS, etc.), these resources include (but are not limited to) this syllabus, how-to documents, FAQs, University services, office hours, tutoring, and class-wide messages. All of these resources are available, communicated, and posted or linked on the course site so that you can find them quickly on your own (instead of having to wait for a response).

- Independently seeking out and employing the resources provided (such as using the “best” strategies for practice questions, instead of the “good” or “better” strategies or not doing practice questions at all) is an indication a student is successfully demonstrating resource management.
- Not setting up your ALEKS account correctly or not fully reading class-wide E-mails and announcements suggest there are opportunities for improved resource management.

Course Policies

Appropriate student use of class notes and course material

Lecture videos in our course will be used for educational purposes only for the students enrolled in our class this term. Similarly, taking notes is a means of recording information and personally absorbing and integrating the educational experience.

Students must receive explicit instructor permission in order to share lecture videos, course content, quizzes, lecture materials, etc.

Disseminating class notes and materials (including exams, lecture videos, practice exams, worksheets, handouts, etc.) beyond the classroom community and/or accepting compensation for taking and/or distributing class notes undermines instructor interests in their intellectual work product while not substantially furthering instructor and student interests in effective learning.

Sexual harassment, sexual assault, stalking, and relationship violence

The University prohibits sexual misconduct, and encourages anyone experiencing sexual misconduct to access resources for personal support and reporting. If you want to speak confidentially with someone about an experience of sexual misconduct, please contact your campus resources including the Aurora Center, Boynton Mental Health or Student Counseling Services (<https://eoaa.umn.edu/report-misconduct>). If you want to report sexual misconduct, or have questions about the University's policies and procedures related to sexual misconduct, please contact your campus Title IX office or relevant policy contacts.

Instructors are required to share information they learn about possible sexual misconduct with the campus Title IX office that addresses these concerns. This allows a Title IX staff member to reach out to those who have experienced sexual misconduct to provide information about personal support resources and options for investigation. You may talk to instructors about concerns related to sexual misconduct, and they will provide support and keep the information you share private to the extent possible given their University role.

https://regents.umn.edu/sites/regents.umn.edu/files/2019-09/policy_sexual_harassment_sexual_assault_stalking_and_relationship_violence.pdf

Late registration

Please be advised that joining the course after the start of classes does not excuse you from attendance and/or any work collected and/or graded. You should give careful consideration to this prior to late addition (after the first day of classes) to our course.

Use of personal electronic devices in the classroom

Using personal electronic devices in the classroom setting can hinder instruction and learning, not only for the student using the device but also for other students in the class. For complete information, please reference <http://policy.umn.edu/Policies/Education/Education/STUDENTRESP.html>.

Mental health and stress management

As a student, you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance and may reduce your ability to participate in daily activities. University of Minnesota services are available to assist you. You can learn more about the broad range of confidential mental health services available on campus via the Student Mental Health website: <http://www.mentalhealth.umn.edu>.

Issues with your instructor

On occasion you may have a concern or problem regarding this course. You will find your instructor quite willing to discuss this with you. If, however, you wish to discuss it with someone other than your instructor, please contact Prof. Lee Penn, the Chemistry Department Director of Undergraduate Studies. Their office is 225 Smith Hall and phone number is 626-4680. You may also send e-mail to them at rleppenn@umn.edu. They will serve as a mediator in helping to resolve the issue.

Student workload expectations per undergraduate credits

For fall and spring semester, one credit represents, for the average University undergraduate student, three hours of academic work per week, averaged over the term, in order to complete the work of the course to achieve an average grade. One credit equals 42-45 hours of work over the course of the term (1 credit x 3 hours of work per week x 14 or 15 weeks in a semester = 42 to 45 hours of academic work). Thus, enrollment for 15 credits in a term represents approximately 45 hours of work per week, on average, over the course of the term.

Overlapping and back-to-back courses

Enrolling in overlapping or back-to-back courses that do not allow enough travel time to arrive at class meetings (including exams) on time is prohibited. For more information, see <http://policy.umn.edu/education/overlappingclasses>.

Student conduct code

The University seeks an environment that promotes academic achievement and integrity, that is protective of free inquiry, and that serves the educational mission of the University. Similarly, the University seeks a community that is free from violence, threats, and intimidation; that is respectful of the rights, opportunities, and welfare of students, faculty, staff, and guests of the University; and that does not threaten the physical or mental health or safety of members of the University community.

As a student at the University you are expected to adhere to Board of Regents Policy: *Student Conduct Code*. To review the Student Conduct Code, please see: https://regents.umn.edu/sites/regents.umn.edu/files/2019-09/policy_student_conduct_code.pdf

Note that the conduct code specifically addresses disruptive classroom conduct, which means "engaging in behavior that substantially or repeatedly interrupts either the instructor's ability to teach and/or a student's ability to learn." The classroom extends to any setting where a student is engaged in work toward academic credit or satisfaction of program-based requirements or related activities.

Equity, diversity, and equal opportunity

The Department of Chemistry is united in the belief that diversity in all of its forms is good. Collaboration among people of all cultures and backgrounds enhances our experience as scientists and contributes to excellence in teaching, learning, and research. We strive to promote a climate that celebrates our differences and strengthens our department by embracing and working to increase our diversity.

The University provides equal access to and opportunity in its programs and facilities, without regard to race, color, creed, religion, national origin, gender, age, marital status, disability, public assistance status, veteran status, sexual orientation, gender identity, or gender expression. For more information, please consult Board of Regents Policy: https://regents.umn.edu/sites/regents.umn.edu/files/2019-09/policy_equity_diversity_equal_opportunity_and_affirmative_action.pdf.

Scholastic dishonesty

You are expected to do your own academic work and cite sources as necessary. Failing to do so is scholastic dishonesty. Scholastic dishonesty means plagiarizing; cheating on assignments or examinations; engaging in unauthorized collaboration on academic work; taking, acquiring, or using test materials without faculty permission; submitting false or incomplete records of academic achievement; acting alone or in cooperation with another to falsify records or to obtain dishonestly grades, honors, awards, or professional endorsement; altering, forging, or misusing a University academic record; or fabricating or falsifying data, research procedures, or data analysis. (Student Conduct Code: https://regents.umn.edu/sites/regents.umn.edu/files/2019-09/policy_student_conduct_code.pdf) If it is determined that a student has cheated, the student may be given an "F" or an "N" for the course, and may face additional sanctions from the University. For additional information, please see: <https://policy.umn.edu/education/instructorresp>.

The Office for Community Standards has compiled a useful list of Frequently Asked Questions pertaining to scholastic dishonesty: <https://communitystandards.umn.edu/avoid-violations/avoiding-scholastic-dishonesty>. If you have additional questions, please clarify with your instructor for the course. Your instructor can respond to your specific questions regarding what would constitute scholastic dishonesty in the context of a particular class, e.g., whether collaboration on assignments is permitted, requirements and methods for citing sources, if electronic aids are permitted or prohibited during an exam.

Academic freedom and responsibility

Academic freedom is a cornerstone of the University. Within the scope and content of the course as defined by the instructor, it includes the freedom to discuss relevant matters in the classroom. Along with this freedom comes responsibility. Students are encouraged to develop the capacity for critical judgment and to engage in a sustained and independent search for truth. Students are free to take reasoned exception to the views offered in any course of study and to reserve judgment about matters of opinion, but they are responsible for learning the content of any course of study for which they are enrolled.*

Reports of concerns about academic freedom are taken seriously, and there are individuals and offices available for help: your instructor, the department chair, your academic advisor, the associate dean of the college, or the Vice Provost for Faculty and Academic Affairs in the Office of the Provost. See the Board of Regents policy for further information: http://regents.umn.edu/sites/regents.umn.edu/files/policies/Academic_Freedom.pdf.

* Language adapted from the American Association of University Professors "Joint Statement on Rights and Freedoms of Students".

Disability accommodations

The University of Minnesota views disability as an important aspect of diversity and is committed to providing equitable access to learning opportunities for all students. The Disability Resource Center (DRC) is the campus office that collaborates with students who have disabilities to provide and/or arrange reasonable accommodations.

If you have, or think you may have, a disability (including, but not limited to, mental health, attention, learning, chronic health, sensory, or physical), please contact DRC at (612) 626-1333 to arrange a confidential discussion regarding equitable access and reasonable accommodations.

If you are registered with Disability Resource Center and have a current letter requesting reasonable accommodations, please contact your instructor as early in the semester as possible to discuss how the accommodations will be applied in the course.

For more information, please see the DRC website, <https://diversity.umn.edu/disability/>.

International Student Resources

Many international students and scholars experience difficulty during their stay in the US, and International Student and Scholar Services (www.iss.umn.edu) office is available to help.

COVID-19

As of the writing of this syllabus, the University of Minnesota no longer requires all students, staff, and faculty to wear masks when indoors. However, you are welcome to wear a mask in our class at any time, and it is expected that all members of our class community will respect and honor the decision of those who choose to wear a mask, recognizing the concerns of those who are immunocompromised and/or are taking steps to protect themselves, their families, and others. Members of the campus community are strongly encouraged to get vaccinated. Resources are available for accessing vaccines.

Please stay at home if you experience symptoms of COVID-19 and consult with your healthcare provider about an appropriate course of action. An absence from a quiz due to symptoms of COVID-19 is eligible for an excused absence.

People who are not vaccinated are at high risk for getting and spreading SARS-CoV-2, the virus that causes COVID-19. New variants of the virus spread more easily and quickly, particularly among young adults, which may lead to more cases of COVID-19 among college students this semester. An increase in the number of COVID-19 cases will strain healthcare resources and lead to more hospitalizations and potentially deaths.

The best defenses against contracting COVID-19 and spreading the virus to others are vaccination and masking. All members of the University community who can be vaccinated are strongly encouraged to get vaccinated. Visit <https://safe-campus.umn.edu/return-campus/get-the-vax> for resources on how to get vaccinated.

If you experience COVID-19 symptoms or symptoms of any potentially infectious respiratory illness (e.g., fever or chills, cough, shortness of breath or difficulty breathing, new loss of taste or smell, sore throat, congestion or runny nose), you should stay home or in your residence hall room and not come to class. Please consult with your healthcare provider about an appropriate course of action, and please consult the M-test program for COVID testing resources.

Note that pandemic guidelines update regularly in response to guidance from health professionals and the prevalence of the virus in our community. You will be notified of any changes at <https://safe-campus.umn.edu/return-campus/covid-19-updates>.

Week	Day	Date	Topic	Homework Due	Quizzes
1	T	5-Sep	Chapter 16		
	Th	7-Sep	Chapter 16		
2	T	12-Sep	Chapter 16		
	Th	14-Sep	Chapter 16	A (Due at 11:59pm)	
3	T	19-Sep	Chapter 16/17		
	Th	21-Sep	Chapter 17	B (Due at 11:59pm)	Quiz 1 on Chapter 16 (opens 4pm Th 9/21 & closes 4pm F 9/22)
4	T	26-Sep	Chapter 17		
	Th	28-Sep	Chapter 17	C (Due at 11:59pm)	
5	T	3-Oct	Chapter 17/18		
	Th	5-Oct	Chapter 18	D (Due at 11:59pm)	Quiz 2 on Chapter 17 (opens 4pm Th 10/5 & closes 4pm F 10/6)
6	T	10-Oct	Chapter 18		
	Th	12-Oct	Chapter 18	E (Due at 11:59pm)	
7	T	17-Oct	Chapter 18/19		
	Th	19-Oct	Chapter 19	F (Due at 11:59pm)	Quiz 3 on Chapter 18 (opens 4pm Th 10/17 & closes 4pm F 10/18)
8	T	24-Oct	Chapter 19		
	Th	26-Oct	Chapter 19	G (Due at 11:59pm)	
9	T	31-Oct	Chapter 19/20		
	Th	2-Nov	Chapter 20	H (Due at 11:59pm)	Quiz 4 on Chapter 19 (opens 4pm Th 11/2 & closes 4pm F 11/3)
10	T	7-Nov	Chapter 20		
	Th	9-Nov	Chapter 20	I (Due at 11:59pm)	
11	T	14-Nov	Chapter 20/21		
	Th	16-Nov	Chapter 21	J (Due at 11:59pm)	Quiz 5 on Chapter 20 (opens 4pm Th 11/16 & closes 4pm F 11/17)
12	T	21-Nov	Chapter 21		
	Th	23-Nov	No Class: Thanksgiving	K (Due at 11:59pm)	
13	T	28-Nov	Chapter 21		
	Th	30-Nov	Chapter 21/23	L (Due at 11:59pm)	Quiz 6 on Chapter 21 (opens 4pm Th 11/30 & closes 4pm F 11/1)
14	T	5-Dec	Chapter 23		
	Th	7-Dec	Chapter 23	M (Due at 11:59pm)	
15	T	12-Dec	Chapter 23 / Review		Dec 13 = Last Day of Instruction
16	Sat	16-Dec		Sat 12/16 Full Pie Due by 11:59 pm	Final exam opens at midnight 11/15 closes at 11:59 pm 11/16

Suggested Practice Problems: Chemistry: The Molecular Nature of Matter & Change, 9th Edition

The problems at the end of each chapter are labeled in red or black and are listed as “Chapter number.Problem number” (e.g, problem 7 in Chapter 10 is labeled 10.7). The red problems have answers in Appendix E (back of the textbook) and their worked-out solutions are found in the paper copies of the Student Solutions Manual.

These problems are a supplement to the ALEKS homework. The ALEKS homework is part of your overall course grade, and the problems listed here are not graded. The problems listed here are also similar to some problems you’ll see in ALEKS and/or on the Chapter Quizzes. **It will be difficult for you to do well on exams if you cannot solve the problems listed here.**

There are many more end-of-chapter problems than those suggested here—you are encouraged to work additional problems as needed. Make sure you are working enough practice problems so that you feel comfortable with the material.

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