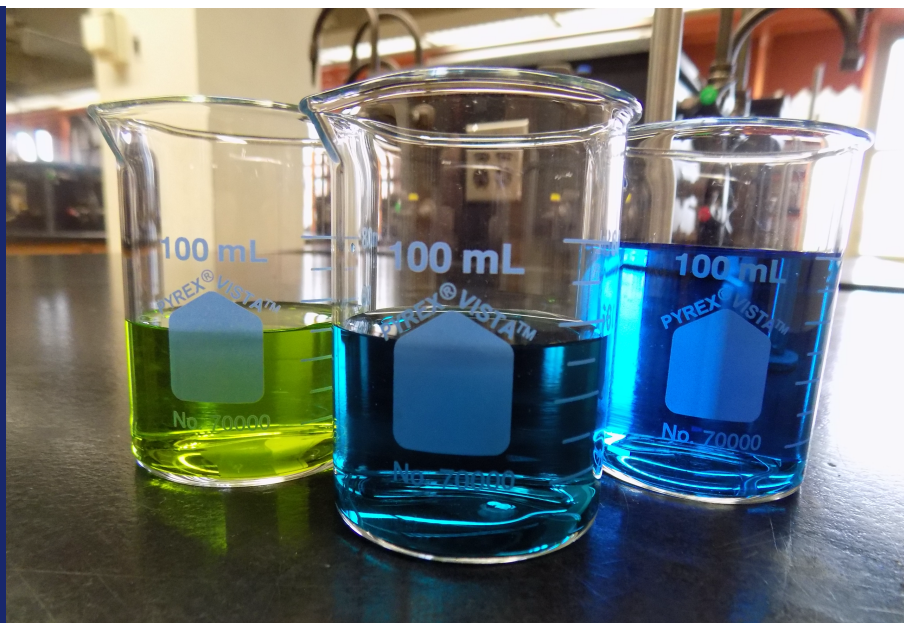


# CHEM 1061

Chemical Principles I

Fall 2023

3 Credits



## Instructor

Dr. Emily Pelton  
(she/her)  
epelton@umn.edu

## Office Hours

Posted on course  
Canvas page

## Course Meetings

T and Th  
8:15 – 9:30 am  
100 Smith Hall

## Course Website

<https://canvas.umn.edu/courses/390660>

## Overview

CHEM 1061 is the first part of an undergraduate general chemistry sequence. We will be using a curriculum known as *Chemistry, Life, the Universe, and Everything* (CLUE). This curriculum is designed to help you learn the fundamental concepts of chemistry. Starting with atomic structure, we will use the ideas of force and energy to look at elements and states of matter. Stoichiometry will allow us to convert between the macroscopic and molecular levels. Light will provide us with evidence of electronic structure (which explains periodic trends). We will model elements and compounds, predict their properties, and explain how they participate in bonding and interactions. Finally, we will connect what we've learned back to energy via temperature and enthalpy.

While the approach we use in our class may be somewhat different from what you're used to, we have evidence that you will finish this course with a deep understanding of chemical principles and that you'll be able to use this knowledge in subsequent courses.

During the term, students will complete frequent in- and out-of-class worksheets and online homework assignments. There will be five chapter mastery checkpoints, and at the end of the course, students will complete a cumulative final mastery checkpoint.

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.

*Why is this course considered an important component of my liberal education?*

A liberally educated person is one who can understand complex issues, find credible information, analyze that information, problem-solve, and draw reasonable conclusions based on facts. This course, along with lab, will develop these skills and prepare you to be an informed citizen and life-long learner.

## Prerequisites

In order to enroll in CHEM 1061, students must have either

- passed the Chemistry Placement Exam and been advised to take this course, or
- completed CHEM 1015 or an equivalent course with a grade of C- or better.

## Course Philosophy

In a traditional classroom, the flow of information is typically from the instructor to students in the form of a lecture. While this is a very efficient way to deliver simple information and learn skills (such as numerical problem solving and material to be memorized), it is not a very effective way for students to learn complex subjects like chemistry. In order to learn something, it is important to *think* about the concepts you are learning, *understand* their implications, and, when faced with a new problem, *be explicitly aware* of your assumptions and clarify (for yourself and others) your understanding.

The approach we will take in this class is to ask you lots of questions and, based on your answers, we will provide feedback, more questions – and some answers! While it may seem easier to just tell you what we want you to know and how to solve problems, studies have found that this approach is not very effective at promoting learning. The goal of this class is to help you become a self-directed learner and to teach you skills that will help you for the rest of your life. Learning how to learn (and how to think) is difficult, and it is understandable if you come to feel a bit overwhelmed initially. It is completely normal to not immediately understand many of the ideas that you will encounter in chemistry. But be patient – you will learn more, in greater depth, than you would in a traditional lecture format.

If you do all the assigned work on schedule and keep up with the material, you will find this course to be interesting and rewarding. If not, you will find that the course quickly becomes incomprehensible. You must keep up! It is impossible to recover once you fall behind. The work in this course is university-level: it is not enough to recall facts and definitions and solve simple problems. The goal of this course is for you to understand chemical processes on the molecular level. To do this, you will need to understand chemical concepts and be able to solve complex problems involving several steps.

**A note about your instructor and learning assistants.** Our role this semester will be to help you learn and understand the concepts and materials in the course. There will be many different methods to accomplish this, almost all of which will require you to become an active participant. A typical class period will consist of very short lectures, perhaps some polling questions, and time to work with your classmates in groups to solve problems. Learning assistants (LAs) and the instructor will be actively circulating during class - please let us know what questions you have as you're working on the material! However, our role is to help facilitate your learning, not to give you the correct answer or confirm that your answer is correct. We will always try to do our best to help you, but what you get from this course depends on you.

## Course Materials

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

### Required

#### **ALEKS**

**Access to an internet-capable computer with Google Chrome, a working webcam, and a working microphone**

**Laminated periodic table/equation sheet:** used when you take mastery checkpoints

**Dry-erase marker:** used when you take mastery checkpoints

### Recommended

**Non-programmable scientific calculator:** used when you complete homework and mastery checkpoints; a built-in calculator is also provided within ALEKS for homework assignments and within Proctorio for mastery checkpoints

### *Inclusive Access*

This semester we will be using ALEKS as part of our online homework. You can access ALEKS via the link in our course Canvas site.

We are making the course material available because it is much more cost-effective for students. Your student account will be charged \$65.50 before the beginning of the semester for access. Those wishing to opt out (purchasing their 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. Students have until September 15, 2023, to opt out of the course material. If you have additional questions, contact UMN Bookstores directly at inclusiveaccess@umn.edu.

## Goals

As a component of your undergraduate education here at the University of Minnesota, this course will offer you the opportunity to identify, define, and solve problems and will provide a strong foundation for the mastery of knowledge and modes of inquiry in the chemical sciences. You will also acquire skills for effective citizenship and lifelong learning. Because CHEM 1061 is designed to prepare students for continuing studies in chemistry, when students leave the course they should demonstrate content mastery and time and resource management. Let's look at each of these skills in turn and examine why they're important.

**Content mastery.** We will learn about a variety of fundamental chemistry principles and phenomena, and our course content will be applicable in both your future coursework and the real world. In our class, you will demonstrate content mastery by completing worksheets, homework assignments and earning points on mastery checkpoints.

**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 for you and your overall goals.** Making these decisions and taking effective steps to reach your goals, though, can sometimes be overwhelming and does require 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!" tab. 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 and in-class activities, working on homework, practicing course material on your own, and taking mastery checkpoints 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 mastery checkpoint 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. How (and if) you employ and implement these resources is also completely up to you, and you must seek out these resources and use them effectively.

**Time management.** You will demonstrate time management by meeting the deadlines for graded activities in our course.

- Working on homework assignments in small, shorter sessions throughout the week and completing mastery checkpoints well before the deadline are two indications a student is successfully demonstrating time management.
- Cramming 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 mastery checkpoint is due) suggest there are opportunities for improved time management.

Almost everyone procrastinates at one time or another (even me!), 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 demonstrate resource management by actively seeking out and effectively using the resources you are provided. In addition to our content resources (lectures, in-class activities, homework, 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, instead of the "good" or "better" strategies or not doing practice outside of class 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.

**You will have (and should ask) questions throughout the semester – otherwise you wouldn't be learning anything new! – and you don't want to waste time and energy being confused.** Critically examining and using all of your available resources *beforehand*, though, could help you answer your question, saving you time and energy.

## In-class and out-of class work

You will have regular assignments that you will work on and submit during class meetings (in-class) and outside of class, and **you should expect to spend time on our class every week.** You are expected to reach certain milestones in your mastery of the entire curriculum during each chapter. The purpose of these assignments is to keep you working regularly and consistently so that you do not fall behind in our course content. In-class worksheets will be completed in-person during our class meetings and submitted at the end of class (9:30 am Central). Readings, pre-class lecture videos, and homework assignments are due on scheduled dates by 11:59 pm Central. Because assignments are available in advance of the due date, *no make-up opportunities* are allowed.

## Course Websites

**Lecture (CHEM 1061) 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 will contain a course calendar, syllabus, and resources to help you succeed in our course. You will take mastery checkpoints through Proctorio, accessed through the course Canvas site. You will find your mastery checkpoint scores posted here as well, under the “Grades” link.

**Lab (CHEM 1065) 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.

## How to be Successful in CHEM 1061

As your instructor, I have put a lot of time and effort into designing and delivering a course that prepares you for your future chemical endeavors, and I am here to help answer your questions. With such a large class, it might seem like you are totally on your own, but you are NOT ALONE! Our class learning assistants and I are all here to help you, and we have a General Chemistry tutor room staffed with TAs that can help you with course content, too. I also encourage you to engage with your classmates by starting or joining a study group to build a supportive peer community, if you think that would be helpful for you!

Lecture content in our class is presented in topic-focused approach. I’ve organized our course Canvas site in a detailed and scaffolded way to help you transition from content acquisition (lectures) to independent application (mastery checkpoints), but **it is in your control** to take that organization, content, help, and guidance and actually do the individual work needed to be successful in making the transition.

What is the “individual work” you need to do? A lot of it boils down to this: **you are in charge of your own learning**. This is one of the biggest differences compared to high school, where you might have thought it was your teacher’s responsibility to make sure you were 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!

- Follow **ALL** the steps outlined on Canvas, in order, for each day of each week (*not a few, not some, not most, ALL*)
- Engage in every lecture video and take excellent notes (*don’t work on an essay or scroll Instagram while watching lecture videos*)
- Actively work on worksheets in class, asking questions of your peers, your instructor, and the learning assistants as needed
- Finish and submit all assignments on time
- Practice for mastery checkpoints as recommended (*check out the Help documents on Canvas for details*)
- Quickly and consistently review and correct mistakes made in your notes, worksheets, homework, and mastery checkpoints
- Ask for help and seek out resources to support your learning

One important note: **Watching lecture videos and completing the online homework and worksheets ARE NOT ENOUGH to prepare you to do well on mastery checkpoints.** 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 mastery checkpoint.

Everyone defines success differently. At the beginning of the term, define your goal(s) for CHEM 1061 and make a specific, detailed plan on how to get there. Strategies for developing and implementing your plan can be found in the resources posted on Canvas. By enrolling in our class, you have taken the first step to expanding your horizons in the chemical sciences – I look forward to helping you take your next steps!



## Mastery Checkpoints and the Final Mastery Checkpoint

**Location.** You can take your mastery checkpoints and final mastery checkpoint 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 mastery checkpoint.

**Times.** The availability window will be open on the scheduled weeks from 4 pm Central Thursday to 4 pm Central Friday (24 hours). There is no time limit, but you must complete the entire mastery checkpoint in one continuous session. I strongly encourage you to **begin your mastery checkpoint no later than noon on Fridays** to help ensure you have time to complete your mastery checkpoint and help account for any technical difficulties you may encounter. I won't be available to help with questions or technical issues after noon on Fridays, so please plan accordingly. You will not be able to access any mastery checkpoints after 4 pm Central on scheduled dates.

In addition, the Proctorio Information tab on Canvas gives the steps you should follow if you run into any issues on mastery checkpoints. It is expected that, if you encounter *any* issues related to mastery checkpoints in any way, you will first follow *all* of the steps posted there, including E-mailing Proctorio support. Please do not E-mail me with mastery checkpoint/access/technical issues unless you have already E-mailed Proctorio support during the 24-hour open window, troubleshooted with them, and they have written to you that they have exhausted all possible options.

All mastery checkpoints and the final mastery checkpoint will be proctored electronically in Canvas using Proctorio. The final mastery checkpoint window will be open from 12 am midnight Central to 11:59 pm Central Thursday, December 21.

**Adjust your schedule NOW, and plan any travel, weddings, employment opportunities, meetings, etc. around these mastery checkpoint dates and times.** I want to give you the best opportunity to be successful in the class, so if you have conflicts with any of these dates and/or times, you should resolve them immediately or drop the course so that you don't earn zero points on a graded activity.

All mastery checkpoints, including the final mastery checkpoint, will be given **ONLY** at the scheduled dates and times. *No make-up mastery checkpoints or alternative dates* are an option under any circumstances. If you are enrolled in a UMN course with a time conflict, you must submit a course conflict form. The final mastery checkpoint must be completed in order to earn a letter grade other than F in the course.

**Format.** Mastery checkpoints will consist of multiple choice, short answer, fill-in-the-blank, and matching questions and will cover material as outlined in the course calendar. The mastery checkpoints will be proctored and graded by a computer, a TA, and/or me. To make sure you're able to show me what you know during a mastery checkpoint, make sure you fully understand how to set up your computer and prepare for E-proctoring in advance of the actual mastery checkpoint by taking the Proctorio Setup Quiz. The final mastery checkpoint will be cumulative and cover all material presented in the course.

**Materials.** You must have your U-Card or a photo ID, periodic table/equation sheet, and a dry erase marker at each of the mastery checkpoints and the final mastery checkpoint. All mastery checkpoints and the final mastery checkpoint are closed book and closed note, and no study aids or external resources are permitted. No phones, programmable calculators, paper, or other electronic devices may be used at any time. Only non-programmable, non-graphing calculators are allowed (see specific Calculators policy), and remember, a calculator is provided within the Proctorio system for use during mastery checkpoints if you'd prefer.

**Protocols and behavior.** Please note that your full face must be onscreen and/or visible by the camera for the entire duration of each mastery checkpoint. If your face is not visible, you will earn a 0. During a mastery checkpoint, you *cannot* have (at any time): any device (phone/iPad/tablet/etc.) other than the computer you're using for the mastery checkpoint; headphones/earbuds; scratch paper; non-dry-erasable writing utensils; any other materials not listed in the Materials section above. You must follow all protocols outlined in the course syllabus, course Canvas site, and the mastery checkpoint itself to earn credit for your work.

**Mastery checkpoint regrades.** After the window closes (usually the Monday following a mastery checkpoint), you will be able to review your mastery checkpoint and how it was graded. Regrade requests must be submitted, via E-mail directly to the instructor, within 7 days of score posting.

**Missed mastery checkpoints.** In situations of a true emergency, serious illness, or University-sponsored travel, an excused absence may be granted for a mastery checkpoint. 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 mastery checkpoint scores will replace the zero from the excused mastery checkpoint. Only one missed mastery checkpoint will be replaced in this fashion. If circumstances prevent a student from taking more than one mastery checkpoint, a meeting must be scheduled immediately with the instructor to discuss any options available. Student-athletes with a travel letter who miss a mastery checkpoint 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>.

### Mastery Checkpoint Dates

*All mastery checkpoints are due by 4 pm Central on the date listed. The final mastery checkpoint is due by 11 :59 pm Central on the date listed.*

Mastery Checkpoint 1	September 29
Mastery Checkpoint 2	October 13
Mastery Checkpoint 3	October 27
Mastery Checkpoint 4	November 17
Mastery Checkpoint 5	December 8
Final Mastery Checkpoint	December 21

## Grading

I want to encourage you to work hard in our class and give you many opportunities to demonstrate and apply what you are learning. I am here to support your learning (keeping in mind, of course, that learning is personal and will look different for each student). Successful completion of the course will require you to actively engage with all of the activities and to keep up with the pace of our class. If you skip any portion of any work, you will fall behind quickly and won't likely be able to catch up.

You are expected to fully engage with course activities and complete all work. I understand that you might not fully understand the course material as you're first learning it – therefore, you will not be penalized for incorrect answers in pre-class lecture videos, in-class work, or Canvas homework assignments. You must, though, complete them as a reasonable best attempt to earn credit for these items. ALEKS homework and mastery checkpoints, on the other hand, will be completed after you've learned course content, and these completed items will be graded for accuracy.

Students will be evaluated based on engagement with pre-class lecture videos, engagement with in-class activities, online homework, and mastery checkpoint performance. Your final course percentage will be based on the weighted average of your scores in each of the five categories using the grading breakdown as follows.

<b>Pre-class lecture videos</b>	10%
<b>Canvas homework assignments</b>	10%
<b>Worksheets</b>	10%
<b>ALEKS homework assignments</b>	10%
<b>Mastery checkpoints</b>	<u>60%</u>
	100%

A:	93.0 – 100%	C+:	77.0 – 79.9%
A-:	90.0 – 92.9%	C:	73.0 – 76.9%
B+:	87.0 – 89.9%	C-:	70.0 – 72.9%
B:	83.0 – 86.6%	D:	60.0 – 69.9%
B-:	80.0 – 82.9%	F:	0 – 59.9%

There will be no rounding of percentages or “bumping” of earned course grades at the end of the semester. For further details, please see [policy.umn.edu/education/gradingtranscripts](http://policy.umn.edu/education/gradingtranscripts).

Note that if a student completes all of their pre-class lecture video, worksheets, and homework assignments on time, a mastery checkpoint average of 50% would correlate to a C– letter grade, and a mastery checkpoint average of 75% would correlate to a B letter grade. Hopefully this helps you recognize the importance of these “quick win” pre-class lecture video, worksheet, and homework assignment points – getting your assignments fully done on time will pay off!

**Pre-class lecture videos.** You must watch the videos *and* answer the embedded questions within the videos before their due dates. These videos are to be watched *before* our class meetings where we will apply these concepts. Even though you may answer one of the embedded questions incorrectly (remember, you're learning!), you *must* click through the last question at the end of each video and click “Submit” on each to earn credit for watching the pre-class lecture video. This is the only way Canvas will record your work and the only way you will earn credit for completing these assignments.

Your pre-class lecture video score for each chapter will be graded for completion by their respective deadlines. For example, if there are 10 videos in a chapter, and you view, answer questions, and submit 7 of them by their respective deadlines, you would earn 70% for that chapter.

**Worksheets.** During each class meeting, you will have an opportunity to work with peers, your instructor, and our class learning assistants to apply and practice what you are learning outside of class time. You must be present for the entire class meeting, actively engage with your peers and the class activities, *and* upload your completed work at the end of class to earn credit. Again, your answers don't necessarily have to be correct to earn credit, but your work must represent an honest attempt and engagement in the work.

Your worksheet score for each chapter will be graded for completion by their respective deadlines. For example, if there are 8 worksheets in a chapter, and you work on and engage with them in class and submit 4 of them by their respective deadlines, you would earn 50% for that chapter. Note that graders will check your submitted work for worksheets throughout the semester to confirm that you are fully engaging with the material. If not, you will not earn credit for these items.

**Canvas homework.** The Canvas homework is where you will sometimes be asked to think about upcoming material or perhaps to apply something you've practiced recently in class. You should give each question your best attempt, but don't worry about being perfect. You must answer the last question on each homework set correctly in order to earn credit. This is the only way Canvas will record your work and the only way you will earn credit for completing these assignments.

Your Canvas homework score for each chapter will be graded for completion by their respective deadlines. For example, if there are 5 homework assignments in a chapter, and you answer all questions and submit 4 of them by their respective deadlines, you would earn 80% for that chapter. Note that graders will check your submitted work for worksheets throughout the semester to confirm that you are fully engaging with the material. If not, you will not earn credit for these items.

**ALEKS homework.** ALEKS is our adaptive homework system where you will practice some of the basic skills and concepts in the course. An introduction to ALEKS is posted on our course Canvas site to help you get the most from ALEKS with the least time and effort. You must follow the instructions in Canvas to ensure you're registered for the correct homework site, and you must use your UMN E-mail address (@umn.edu) to earn

credit. Completing this work on time and earning 100% on it will give you a basic foundation of our course concepts but alone will not prepare you adequately for mastery checkpoints.

Your ALEKS score for each chapter will be graded for accuracy and completion by its deadline. For example, if you complete 79% of the assignment by the deadline, you would earn 79% for that chapter.

**Mastery checkpoints.** Mastery checkpoints are where you get to show all that you have learned for each unit of material. You will be expected to put together complex ideas and explain chemical phenomena using ideas that are explored in our course activities. There are no retakes for mastery checkpoints.

**Final mastery checkpoint.** You must take the final mastery checkpoint in order to earn a letter grade other than F in the course. No retakes are possible. The final mastery checkpoint will be cumulative and will cover all material presented in the course. For more information, please see [policy.umn.edu/education/gradingtranscripts](http://policy.umn.edu/education/gradingtranscripts).

## Grading Policies

**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, 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 mastery checkpoint *and* have taken all mastery checkpoints 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](mailto:eric1715@umn.edu)) and have it signed by me.

*Is there extra credit?*

There is no extra credit in CHEM 1061.

**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!

## Calculators

**Acceptable calculators.** 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. Many other two-line calculators are programmable and would therefore *not* be allowed. If you are concerned about whether or not your calculator would be acceptable, you could purchase the recommended calculator for the course, just in case.

**Calculators during mastery checkpoints.** Calculators may not be shared during mastery checkpoints. If you are concerned about battery failure during the mastery checkpoint, bring a second calculator or extra batteries with you. In addition, the Proctorio system has a built-in calculator feature that you can use during mastery checkpoints.

*Can I use my graphing calculator?*

No. Graphing and/or programmable calculators are FORBIDDEN on any mastery checkpoint. 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 mastery checkpoints.

## Tutoring

**General chemistry tutor room.** General chemistry tutors are available for free on a drop-in basis during the term in person in 124 Smith Hall and online via Zoom, and the schedule can be found on the course Canvas site. The tutors are there to help you learn and not to simply give you answers – the tutors are actually instructed to ask *you* questions that will help you understand what concept you are missing that is preventing you from solving a particular problem. Solving the problem yourself with a tutor's guidance will enhance the depth and retention of your knowledge.

It is important to me that your time is well spent in the tutor room. If tutors are not present at scheduled times, are not helpful, or if they leave for extended periods of time, please let the General Chemistry lab team ([genchem@umn.edu](mailto:genchem@umn.edu)) or me know immediately.

**Learning assistant hours.** Learning assistants for 1061 will be available throughout the week to help with questions you may have about the material. See the LA Hours link on Canvas for the schedule and additional details.

**Private tutors.** A list of people available for hire as private tutors is available on our course Canvas site, if this is something you're interested in.

## 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, mastery checkpoints, 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.

### 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>.

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

### 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. Michelle Driessen, Director of General Chemistry, at [mdd@umn.edu](mailto:mdd@umn.edu). She will serve as a mediator in helping to resolve the issue.

### 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\\_talking\\_and\\_relationship\\_violence.pdf](https://regents.umn.edu/sites/regents.umn.edu/files/2019-09/policy_sexual_harassment_sexual_assault_talking_and_relationship_violence.pdf)

### 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.

### 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.

### 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://disability.umn.edu>.

### 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](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, equal opportunity, and affirmative action

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](https://regents.umn.edu/sites/regents.umn.edu/files/2019-09/policy_equity_diversity_equal_opportunity_and_affirmative_action.pdf).

## 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: [https://regents.umn.edu/sites/regents.umn.edu/files/2019-09/policy\\_academic\\_freedom\\_and\\_responsibility.pdf](https://regents.umn.edu/sites/regents.umn.edu/files/2019-09/policy_academic_freedom_and_responsibility.pdf).

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

## 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 [https://policy.umn.edu/education/overlapping\\_classes](https://policy.umn.edu/education/overlapping_classes).

## 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](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/instruct\\_orresp](https://policy.umn.edu/education/instruct_orresp).

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.

Beware of websites that advertise themselves as "tutoring sites". You are not allowed to upload any of our course materials (including, but not limited to, videos, worksheets, homework assignments, exam questions, etc.) to these sites without your instructor's express written permission. In addition, using these sites to complete homework or answer exam questions is considered academic dishonesty, and as a result you would earn an F in the course.

## 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 mastery checkpoint 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>.



## Artificial intelligence and ChatGPT

The Board of Regents Student Conduct Code states the following in Section IV, Subd.1: Scholastic Dishonesty:

*"Scholastic dishonesty means plagiarism; cheating on assignments or examinations, including the unauthorized use of online learning support and testing platforms; engaging in unauthorized collaboration on academic work, including the posting of student-generated coursework on online learning support and testing platforms not approved for the specific course in question; taking, acquiring, or using course materials without faculty permission, including the posting of faculty-provided course materials on online learning and testing platforms; ..."*

Artificial intelligence (AI) language models, such as ChatGPT, and online assignment help tools, such as Chegg®, are examples of online learning support platforms: they cannot be used for course assignments except as explicitly authorized by the instructor. The following actions are prohibited in this course:

- Submitting all or any part of an assignment statement to an online learning support platform;
- Incorporating any part of an AI generated response in an assignment;
- Using AI to brainstorm, formulate arguments, or template ideas for assignments;
- Using AI to summarize or contextualize source materials;
- Submitting your own work for this class to an online learning support platform for iteration or improvement.

If you are in doubt as to whether you are using an online learning support platform appropriately in this course, I encourage you to discuss your situation with me.

Any assignment content composed by any resource other than you, regardless of whether that resource is human or digital, must be attributed to the source through proper citation. (Examples of citing content composed by digital tools are presented in: [libguides.umn.edu/chatgpt](http://libguides.umn.edu/chatgpt))

Unattributed use of online learning support platforms and unauthorized sharing of instructional property are forms of scholastic dishonesty and will be treated as such.

# Class Schedule

**In-class worksheets are due by 9:30 am Central on scheduled dates in course calendar.**

**Readings, pre-class lecture videos, out-of-class worksheets, and homework assignments (Canvas and ALEKS) are due by 11:59 pm Central on scheduled dates in course calendar.**

**Mastery Checkpoints are due by 4 pm Central on scheduled dates.**

**Final Mastery Checkpoint is due by 11:59 pm Central on scheduled date.**

## Chapter 1

Atoms

Weeks 1-3

Readings and pre-class lecture videos: September 6, 11, 13, 18, 20, 25

In-class worksheets: September 5, 7, 12, 14, 19, 21

Out-of-class worksheets: September 11, 18, 25

Canvas homework: September 6, 11, 13, 18, 25

ALEKS homework: September 23

Mastery Checkpoint 1: September 29

## Chapter 2

Electrons and Orbitals

Weeks 4-5

Readings and pre-class lecture videos: September 25, 27; October 2, 4, 9

In-class worksheets: September 26, 28; October 3, 5

Out-of-class worksheets: September 25

Canvas homework: September 25; October 4, 9

ALEKS homework: October 7

Mastery Checkpoint 2: October 13

## Chapter 3

Elements, Bonding, and Physical Properties

Weeks 6-7

Readings and pre-class lecture videos: October 9, 11, 16, 18, 23

In-class worksheets: October 10, 12, 17, 19

Out-of-class worksheets: October 9, 23

Canvas homework: October 9, 16, 23

ALEKS homework: October 21

Mastery Checkpoint 3: October 27

## Chapter 4

Heterogeneous Compounds

Weeks 8-10

Readings and pre-class lecture videos: October 23, 25, 30; November 1, 6, 8, 13

In-class worksheets: October 24, 26, 31; November 2, 7, 9

Canvas homework: October 30; November 1, 13

ALEKS homework: November 11

Mastery Checkpoint 4: November 17

## Chapter 5

Systems Thinking

Weeks 11, 13

Readings and pre-class lecture videos: November 13, 15, 29; December 4

In-class worksheets: November 14, 16, 28, 30

Canvas homework: November 15; December 4

ALEKS homework: December 2

Mastery Checkpoint 5: December 8

## Review for Final Mastery Checkpoint

Weeks 14-15

Final Mastery Checkpoint: December 21