

CHM 114: General Chemistry for Engineers Syllabus

Fall Semester 2023 Session C

SLN 75066: T Th 9:00 – 10:15 am MST in PSH 153

SLN 82846: T Th 3:00 – 4:15 pm MST in PSH 150

Faculty Information

Professor: Dr. Ashli Morgan

Email: Ashli.Morgan@asu.edu (put “CHM 114” in subject line to ensure delivery)

If you don't receive a response within 2 business days, please resend the email. Do not send emails through Canvas or your personal email as these may not reach me; please use your ASU email for all communications with me. Emails sent after 6:00 pm MST may not be answered until after 8:00 am MST (at the earliest) on the next business day (Monday - Friday). If an email is sent to on a weekend (Saturday, Sunday), a response may not be sent until after 8:00 am MST on the following Monday.

Office: Physical Sciences, D-wing (PSD), Room 301

Office Hours: T Th 10:30 am – 11:30 am MST; 1:30 pm – 2:30 pm MST in PSD 301 **AND ZOOM**

(<https://asu.zoom.us/j/4704581370>) OR **by appointment (Mon. – Fri.)**

You can access my office hours virtually by clicking on ‘Zoom’ in the navigation panel for this course.

Course Description

Welcome to Chemistry 114 at Arizona State University! CHM 114 is a one-semester general chemistry course covering chemical principles with emphasis toward engineering. This course will cover the nature of atoms and elemental substances, the combination of atoms to form molecules and compounds, the interactions between atoms and molecules, chemical bonding models, relationships between chemical and physical properties, equilibrium, thermochemistry and electrochemistry—topics that are important to engineers. More importantly, you will have the opportunity to practice your critical thinking skills and learn how the macroscopic world around you can be explained by the microscopic world underneath. In this course we will emphasize conceptual understanding (not memorization) through visualization, critical thinking, and problem solving. You need to solve mathematical problems, but you will also need to know the significance of your calculations. You will also gain a better understanding of the molecular nature of matter. As you study, take the time to look at the figures and make sure you can interpret their significance. Focus on understanding (the “why” and the “how”). When solving problems, check to make sure your answer makes sense! Trying to memorize your way through this course will not lead to success.

Credits: 4

Pre-Requisites: CHM 101 with C or better OR Mathematics Placement Test score of 50% or higher, OR ALEKS score of 61 or higher, OR Pre/Co-requisites: MAT 170 (or MAT 171, 210, 251, 265 or 270) with C or better if completed, OR Visiting University Student. *It is highly recommended that you have taken a chemistry course at the high school or college level. If not, it is recommended that you take CHM 101 prior to CHM 114. If you are a chemical engineering major, you must enroll in the CHM 113/116 sequence.*

You are responsible for knowing all of the information in this syllabus—please read it carefully!

Course Learning Outcomes

At the completion of this course, students will be able to:

1. Describe the structure and behavior of the particulate nature of matter.
2. Demonstrate how bonding in different types of chemical compounds affects chemical and physical properties.
3. Describe the relationship between energy changes and heat transfer and how heat changes are measured.
4. Describe how the interactions between molecules in different physical states affects properties.
5. Write and explain chemical equations and work with quantities involved in chemical reactions.
6. Use thermodynamic principles to predict direction and spontaneity of reactions.
7. Understand chemical equilibrium and how it responds to changes.
8. Understand the nature of oxidation-reduction reaction and how they can be used to generate electricity.
9. Relate knowledge of chemical reactions to real-world examples.

Course Components

All students are required to be enrolled in three complementary sections:

- **Lecture**

- **During Lecture:** Scheduled lectures are traditional in the sense that I will be presenting material that aligns with provided notes for each chapter listed in the course schedule. **Attendance in lecture is expected.** However, problem solving is important in chemistry as it leads to the required understanding of topics and will, thus, be an integral part of lecture along with live demonstrations. Exams will focus on the learning objectives posted on Canvas. **Unit exams will be administered online and proctored remotely using Respondus Lockdown Browser with Monitor. The final exam will be administered in person.**
- **How to Prepare for Lecture:** Print/Download the provided notes for the chapter and review the slides. This can be supplemented by reading the associated section(s) in the eBook, a great resource in Brytewave that contains explanations, videos, and example problems.
- **Lecture Assignments:**
 1. There are two types of regularly-occurring required lecture assignments. **Canvas Concept Checks (CC)** and **MasteringChemistry™ Chapter Homework (HW)**. These assignments are designed to help you understand concepts and prepare you for exams. Both Concept Checks and MasteringChemistry™ assignments will usually be due the day after we finish covering the material in class.
 2. The **Syllabus and Academic Integrity Agreement** is due **Monday, August 21st**. See Module 0.
 3. The **Dynamic Study Modules (DSMs)** in MasteringChemistry™ are extra credit, and they are all due the Monday of Finals Week. These are **OPTIONAL** practice problems that many students like to use to study so they are open all semester.

- **Recitation**

The weekly recitation activities have been designed to help students succeed in the course. Each week there will be a graded recitation activity designed to introduce and enhance course material. You must be present, on time, and participate during the recitations to receive credit. The recitation class meets in a room designed to allow for collaborative learning through student-student and student-instructor discussions. This Chemistry Collaborative Learning Center (CCLC) is room PSH 135. Recitation sessions and student collaboration are an essential component of the course that cannot be replicated at home.

Missing more than 4 recitation classes will result in failure of the entire course.

- **Laboratory**

The laboratory provides you the opportunity to learn laboratory techniques and skills. Performing experiments also helps strengthen your understanding of important chemistry concepts. To receive credit for each lab, you must be on time to class, fully participate in the lab activity, and contribute to the lab report. The laboratory is an essential component of the course that cannot be replicated at home.

Missing more than 4 laboratory classes will result in failure of the entire course.

Required Materials

1. **(REQUIRED)** Pearson Modified MasteringChemistry™ access for the **15th edition** of *Chemistry: The Central Science* with Pearson eText by Brown, LeMay, Bursten & Murphy (2022). We will be using the **ASU-Inclusive Access program**, which provides access at a significantly discounted rate. For this access, **your ASU student account will automatically be charged \$35.75, plus tax**, following the drop/add period. **The procedure for obtaining your unique access code is on Canvas in Module 0.**
2. **(REQUIRED)** A **non-programmable, scientific calculator** will be needed for in-class questions, concept checks, homework, and the final exam. For unit exams, only the Respondus Lockdown Browser Online Calculator will be allowed.
3. **(REQUIRED)** For online assignments and exams, students will need a **computer (NOT a tablet, iPad, or Chromebook)** and a **reliable broadband internet connection**.
4. **(REQUIRED)** A **webcam** will be needed for online unit exams and is recommended if attending office hours online.
5. Access to a **printer** is recommended for printing out notes/assignments.

NOTE: Materials needed for lab can be found in the CHM 114 Lab Syllabus. Please access this on the lab Canvas site.

Course Websites/Access

Your ASU courses can be accessed by both my.asu.edu and myasucourses.asu.edu. Bookmark both in the event that one site is down.

Canvas: There will be **three Canvas sites** for this course. Each Canvas course has community forums/discussion boards where you can ask questions.

1. The **LECTURE** site will be used to post lecture content and scores. Announcements, lecture content, handouts, and concept checks will be posted to this Canvas site frequently. You will be taking your exams in this site as well. You should check here regularly (at least once per day). *Please note that your homework scores will be synced to Canvas after each due date.*
2. The **RECITATION** site will be used to access/submit recitation activities and to post recitation scores and communications from the lead CHM 114 recitation instructor. *The CHM 114 Slack page and the discussion session content will also be accessible here.*
3. The **LAB** site will be used to post lab scores and communications from Beatriz Smith and/or your lab TA. You will be submitting lab worksheets and reports to this site.



MasteringChemistry™: You will have access to **one Modified MasteringChemistry™** course for your CHM 114 eBook and homework. Your MasteringChemistry™ homework course should be accessed using the 'Access Pearson' course navigation link in the lecture Canvas site. **The procedure for obtaining your unique access code is on Canvas in Module 0.**



Computer Requirements

- **Students will need a computer with a functional webcam (not a tablet, iPad, Chromebook) for assignments and exams.**
- Web browsers ([Chrome](#) or [Mozilla Firefox](#)). Other browsers are not fully compatible with the Canvas system and may not function or may function unpredictably.
- [Adobe Acrobat Reader](#) (free)
- **(RECOMMENDED, NOT REQUIRED)** Headset/earbuds with a functional microphone, and speaker
- Microsoft Office ([Microsoft 365 is free](#) for all currently-enrolled ASU students)
- Reliable broadband internet connection (DSL or cable) to stream videos and/or take exams. It is recommended that your internet download speed is at least 5.0 Mbps. You can use this [tool to test your current connection](#).

Technical Support

- **Canvas Help Icon:** The 'Help' icon located in the black global navigation menu in our Canvas course will allow you to virtually chat with a Canvas representative who is available to assist you 24 hours a day, 7 days a week.
- **ASU Experience Center:** You can call the ASU Experience Center at +1 (855) 278-5080 to speak directly with a Canvas representative who is available to assist you 24 hours a day, 7 days a week. **Be sure to ask for a case number if your technology issue is affecting the submission of an assignment or exam.**
- **MasteringChemistry Support:** Access MasteringChemistry Student Support (<https://www.pearsonmylabandmastering.com/northamerica/masteringchemistry/students/support/index.html>) for any technical issues.

Course Communication

Slack Workspace

CHM 114 has a designated Slack workspace to which you are encouraged to post your homework questions or to answer the questions of others. This will be primarily moderated by our Honors students from our course. I would recommend downloading the Slack app to your phone to easily access this workspace after joining!

Here is the link: **TBA**

Announcements

I will communicate important announcements and course updates through Canvas Announcements which will push to your ASU email. Check Announcements on Canvas **every day**.

Email

Email me directly at Ashli.Morgan@asu.edu. Identify your class (**CHM 114**) in the subject line so I can provide the best response to you as I teach multiple classes. *If you don't receive a response within 2 business days, please resend the email. Do not send emails through Canvas or your personal email as these may not reach me; please use your ASU email for all communications with me. Emails sent after 6:00 pm MST may not be answered until after 8:00 am MST (at the earliest) on the next business day (Monday - Friday). If an email is sent to on a weekend (Saturday, Sunday), a response may not be sent until after 8:00 am MST on the following Monday.*

All instructor correspondence will be sent to your ASU email account. For time-sensitive issues, it is best to email immediately rather than Slack, office hours, or other means.

Communication Etiquette

When emailing me or any of your instructors/TAs, please use your ASU email only, NOT your personal email OR your Canvas email system. These emails often cannot make it past ASU's spam filters, resulting in no receipt of the email. In any email you send, you should include:

- the class in which you are enrolled in the subject line,
- a salutation to me (so I know that I am the intended recipient of your email),
- a detailed explanation of your question/issue along with supporting documentation (i.e. a screenshot of a problem or a doctor's note),
- and close out the email with your name.

Communications between students, and between students and instructors, should be respectful and professional. Discussion etiquette is detailed in Module 0.

Grading

Course letter grades will be assigned according to your percentage out of 1000 possible points (no curve):

Assignment	Points	% of Total Points	Point Total	Letter Grade*
Unit Exams (3)	300	96-100	960+	A+
Final Exam	150	92-95.9	920-959	A
Laboratory Work	200	88-91.9	880-919	A-
Recitation Work	130	84-87.9	840-879	B+
Online Homework (best 14 of 16)	150	80-83.9	800-839	B
Concept Checks (best 14 of 16)	56	76-79.9	760-799	B-
Practice Exams	10	72-75.9	720-759	C+
Syllabus/Academic Integrity Quiz	4	64-71.9	640-719	C
TOTAL	1000	52-63.9	520-639	D
		below 52	<520	E

** Points each component may not add up to the total point values listed above. **Category points will be weighted to the point values shown in the table above.***

*** If the overall class distribution at the end of the semester warrants it, these cutoffs may be lowered slightly (they will not be raised). A grade of EN = failing for no participation, EU = failing for incomplete participation, XE = academic dishonesty.*

Grading Errors and Appeals

While we strive to provide accurate grades for all students, there will be times when something gets incorrectly graded or uploaded. **If you receive a zero (0) or a dash (-) for an exam** (indicating your score was not graded/recorded/updated) or you suspect an exam or assignment has been mis-graded, email me immediately so I can get it corrected. Please keep track of your own grades so you know if something is not correct. **You have a two-day limit after grades are posted to let me know about grading errors—after this, scores are considered permanent.**

Grade disputes must first be addressed by discussing the situation with the instructor. If the dispute is not resolved with the instructor, the student may appeal to the department chair per the [University Policy for Student Appeal Procedures on Grades](#).

GRADED Course Assignments

The three Unit Exams will be **online** exams during our scheduled class time on the days indicated in the class schedule on this syllabus. The Final Exam will be **in-person** during finals week.

- **ONLINE Unit Exams (300 points):** Three 100-point exams will be given during the regular semester. Unit exams will be open from **6:00 am MST - 11:59 pm MST** on the scheduled day, and will be proctored remotely using **Respondus Lockdown Browser with Monitor**. Exams will consist of 25 questions worth 4 points each. See lecture schedule and table below for dates and the chapters covered for each exam. **Plan to take each exam well before the deadline time in case you have technical difficulties.** You will have **60 minutes** to complete the exam once you begin. In general, only material covered that unit be included. However, because the course content builds through the semester, you should not forget what you have learned.
 - You are allowed to have a hard-copy of the equation sheet/periodic table as well as ONE 8.5" x 11" handwritten notes page and the Respondus Lockdown Browser Online Calculator. **Do not share your work with anyone else, accept help from anyone else, or use any communication tools during the exam.**
 - It is recommended by the ASU Experience Center to use the **Google Chrome or Mozilla Firefox** web browser when taking your exam. *I recommend that you open the practice exam prior to starting the exam to ensure that images are loading and answer choices are displaying properly. It is your responsibility to troubleshoot these issues in a timely manner.*
 - **No exam will be dropped and there will be no make-up exams (see "Missed Exams").**
- **IN-PERSON Final Exam (150 points):** The Final Exam will consist of 40 multiple-choice questions worth 3.75 points each, administered **in-person**. Scantron forms will be provided. The Final Exam is cumulative and will cover material from Chapters 19 and 20 (~30%) and all material from Unit Exams 1 – 3 (~70%). You will be given 110 minutes to complete the Final Exam. The final is a **Resurrection Final** (see below).
 - **Final Exam Resurrection Rule:** If your Final Exam percentage is **higher** than the percentage on any of your Weekly Exams, the lowest Weekly Exam percentage will be replaced with the Final Exam percentage. The Final Exam is **NOT** an optional component. If the Final Exam percentage is not eligible for this rule, it will remain weighted as 15% of your course grade.
 - You are allowed to have a hard-copy of the equation sheet/periodic table (this is provided on your exam booklet) as well as TWO 8.5" x 11" handwritten notes pages, and a scientific calculator (no graphing calculators allowed). **Do not share your work with anyone else, accept help from anyone else, or use any communication tools during the exam.**
 - **University rules dictate that you must take your Final Exam at the day and time in which it is officially scheduled. Any deviation from this scheduled time must be approved by the Dean of the College. At the discretion of your course instructor and the Dean, you may be allowed to take your Final Exam at an alternate time, however this will result in an automatic penalty of 10% (15 points) from the Final Exam score, unless prior approval is granted.**

Lab and recitation are complementary components to the lecture and the content is focused on increasing your understanding of important concepts in the course while working in groups through guided labs/activities.

- **Laboratory Work (200 points):** Comprised of lab reports, worksheets, pre-labs, participation, and post-labs. Access the Lab Canvas site to view the lab syllabus and to view your lab assignments. **Your score will be weighted to 200 points at the end of the semester from the 275 lab points possible (the maximum points you can earn in lab, including any extra credit, is 275 points).**
- **Recitation Work (130 points):** (13 activities worth 10 points each). Access the Recitation Canvas site to view the recitation syllabus and to view your recitation activities. **The maximum points you can earn in recitation, including any extra credit, is 130 points.**

Homework is a critical component in learning the course material and developing your quantitative skills and problem solving. Working problems regularly outside of class time is the single best way to succeed in the course. **It is the student's responsibility to check Canvas for all assignment deadlines.**

- **Online Homework (150 points):** (16 MasteringChemistry homework assignments, 10 points each) Online homework has been assigned through *Modified MasteringChemistry*. Solving problems regularly outside of class time is one of the single best ways to succeed in this course. In the online homework, you will be given 6 attempts for non-multiple-choice questions and each incorrect answer is a 3% deduction. For additional practice, it is strongly recommended that you complete all the in-chapter exercises and sample problems as well as some additional problems at the end of each chapter. Solutions to many of these exercises can be found in your eBook. ***I recommend that you complete these assignments gradually as the material is presented in lecture rather than saving it all until the last minute or trying to do it too early.***
 - ***There are no extensions provided, even for excused reasons. Instead, your TWO lowest homework scores will be dropped at the end of the course and your score will be weighted to 150 points.***
- **Concept Checks (56 points):** (16 concept checks in Canvas, 4 points each) Chapter Concept Check questions are intended as quick assessments of comprehension of lecture material for each chapter. While the percentage of your final grade from CC questions is only 5.6%, it may be an important contribution in deciding borderline grades. You will be given **THREE** attempts to take each CC. CC questions are designed to be straightforward, conceptual questions/problems with varying degrees of difficulty. The more you pay attention during lectures and prepare for lectures by reading your text ahead, the easier it will be to complete the CC.
 - ***There are no extensions provided, even for excused reasons. Instead, your TWO lowest CC scores will be dropped at the end of the course, resulting in the 56 course points for this component.***
- **Practice Exams (10 points):** A practice exam consisting of ~25 questions will be provided to help prepare you for each Unit Exam as well as for Chapters 19 - 20. **You will receive the full 2.5 points for just completing the practice exam by the due date.**
- **Syllabus and Academic Integrity Agreement (4 points):** In order to access the course material, every student must submit this quiz in Module 0. Submitting this agreement means that you understand and accept everything contained in this syllabus and commit to taking this course with integrity. This agreement will be open all semester, but you will not have access to the course until it is submitted.

Assignment due dates follow Arizona Standard time. Arizona does not observe daylight savings time so it remains in Mountain Standard Time (MST) all year.

See the Course Schedule below (on pages 11 – 12) for the complete list of due dates.

Extra Credit

As mentioned above, working problems regularly is the best way to succeed in this course. To provide you with extra practice, extra credit opportunities are described below:

- **Introduction to MasteringChemistry (1 point):** This is a brief assignment in MasteringChemistry designed to lead you through how the online program works. This will save you A LOT of time on your homework assignments if you complete it early in the semester.
- **How DSM's Work (1 point):** This is a brief assignment in MasteringChemistry designed to lead you through how Dynamic Study Modules (DSMs) work.
- **Dynamic Study Modules (35 points):** There are 35 Dynamic Study Modules (DSMs) assigned in the online homework. These DSMs are adaptive assignments in  Dynamic Study Module MasteringChemistry. They are a great way to help students learn and reinforce the important concepts in each chapter. The DSMs are adaptive, so students will get a varying number of questions depending on how much practice the system gauges from the learner. They also provide excellent feedback! Each DSM is worth **1 extra credit point** and is **due the Monday of finals week**. ***If you partially complete a DSM assignment, you will receive a fraction of a point. These will be available all semester for practice but must be completed by the due date to receive the extra credit.***
- **Discussion Boards (16 points):** There will be four discussion boards assigned throughout the semester, which will each be worth 4 extra credit points each (this can change at the discretion of the instructor). The topics will vary but will be focused on course success and concept mastery.

I offer over 40 points of extra credit over the course of the semester. Take advantage of these opportunities as we go. Some students end up within a few points of the next letter grade and completing the extra credit can really help to achieve a higher grade!

UNGRADED Activities for Success

Discussion Session Problems: Discussion sessions will be led by a General Chemistry Instructor (faculty member) with CHM 114 teaching experience. This instructor will provide practice problems at each session, solve them with students during a weekly Zoom session, and provide all materials/recordings to the Recitation Canvas site.

eBook: Use the eBook as a reference for definitions, rules, and problem-solving strategies. The In-Chapter Exercises often provide good examples that illustrate the important concepts. The eBook sections we cover are with each Chapter's Learning Objectives.

Self-Assessment problems in the MasteringChemistry are located in the "Study Area" which is a menu item in Mastering.

Attendance Policy/Late Assignments

Absences

Attendance at scheduled class lectures, labs, and recitations is essential and expected. Do not expect to consistently miss class and still do well. **If you miss more than four laboratory sessions or more than four recitation sessions (excused or unexcused), you will be assigned a failing grade for the course, regardless of your current grade in the class.**

I do realize that some absences are unavoidable. Throughout this course, it is possible that one (or more) of the following situations may occur:

- a university-sanctioned event [ACD 304-02]
- religious holidays [ACD 304-04; a list can be found here <https://eoss.asu.edu/cora/holidays>]
- work performed in the line-of-duty according to [SSM 201-18]
- illness, quarantine or self-isolation related to illness as documented by a health professional

Absences (or the inability to submit an assignment/exam) may be **excused (or an extension granted)** as per ASU policy. Proper documentation must be submitted before the due date to support your **request** for an excused absence/extension. Once proper documentation has been submitted, the instructor will determine if the grade for the assignment will be excused or if an extension is warranted. Note that excused absences later in the semester do not excuse unexcused absences from earlier in the semester and we cannot retroactively accommodate absences from weeks prior. **Don't put yourself in a situation where you miss multiple labs or recitations for trivial reasons and then fail the course due to an unavoidable absence later in the semester. As most of the assignments are available for several days, it is recommended to get an early start.**

What do I do if I find myself in one of the above situations at any point during the course?

1. **Email Dr. Morgan** (Ashli.Morgan@asu.edu) about your situation as soon as possible if it affects your performance in lecture (*for lab and/or recitation, please email your TA or instructor as per the instructions given in each syllabus*).
 - Inform Dr. Morgan of your situation **BEFORE** the due date of the assignment you miss. **Anticipated absences** for university-sanctioned events, religious holidays, or line-of-duty activity should be communicated to the instructor by email at least **5 days before** the expected absence. **Absences for illness, quarantine or self-isolation** related to illness should be documented by a health professional and communicated to the instructor **by the due date** of the assignment/exam.
 - **Requests made AFTER the due date will not be approved for any reason.** The entire course schedule is provided in the syllabus; refer to this to ensure you are aware of the due dates for the assignments.
2. **Submit supporting documentation** on Canvas.
 - Accepted File Types: pdf, jpg, jpeg, png
 - No other formats will be accepted (i.e. Google doc).
 - *You are welcome to redact any information of a sensitive nature; however, it should be an official document that contains your name, date, and reason for the absence.*
 - **If you do not submit documentation on Canvas, your request will not be approved.**
3. Once the documentation has been reviewed, Dr. Morgan will respond to your initial email with the decision for the assignment.
 - **Submitting documentation does NOT mean that you will automatically receive an extension or be excused for the assignment. It just means you are "requesting" it.**

What do I do if I am absent from lecture?

Here is what I do recommend you do:

- Visit Canvas and download the lecture notes and any handouts from the chapter (these are posted before we begin covering the content in class). Use the eBook when going through the portion of the chapter you missed.
- Find a classmate to copy lecture notes from (if you can't find someone, then one of our Honors students would be happy to help you if you reach out to them on Slack).
- Attend one (or more) discussion sessions for the week on Zoom and/or watch the recordings that are posted shortly after.
- Attend my office hours (or set up an appointment) or those held by your recitation/lab instructors/TAs to go over any questions you have about the material you missed.

What do I do if I am absent from a lab or recitation?

Please contact your lab or recitation instructor and refer to the syllabi for those sections of the course for policies.

Missed Exams

No exams will be dropped nor will there be make-up exams. Therefore, it is imperative that you be online for every unit exam and present for the final exam, and plan travel and other events accordingly.

- **An alternate exam may be administered prior to (BEFORE) the scheduled time only in cases where travel for university-sanctioned function or military training, which cannot be rescheduled, interferes with a scheduled exam.** *If such plans do interfere with an exam date, you must show documentation at least 5 days before the exam date so we can schedule an alternate exam date that is prior to the scheduled exam date.* Keep in mind that if you end up taking an early exam, you may not benefit from the lectures, recitation sections, and review sessions that have been planned to help you with the material. You must provide documentation from the appropriate university official for an early exam to be administered. An alternate exam will not be administered after the exam is administered to the class, except in very rare situations. If this occurs, it will come at a 10% penalty unless documentation is provided and accepted.
- **In cases of sudden illness or an unanticipated emergency that prevents you from taking a scheduled exam, the final exam percentage will be substituted for your missing exam score.** This option can only be exercised once. A second missed exam will be scored as a zero and the Resurrection Final Rule will not be used on another exam score. I recommend trying your best on every exam, rather than counting on the Resurrection Final Rule to replace a low exam score—because you may need to use it later in the semester. *Because all exam dates are scheduled at the beginning of the semester (and all unit exams are online), personal travel, work schedules, traffic, etc. do not constitute grounds for a make-up exam.*

Make-Up Assignments

There will be no make-up work allowed for any assignment. This means lab work, recitation activities, and concept checks will not be accepted late nor will there be any make-up assignments. *Online homework will be accepted after the deadline at a penalty of 5% per hour.*

How Do I Succeed in CHM 114?

This is a common question and while students are different, there are some things that everyone can do to ensure success:

- **Check Canvas regularly.** Be familiar with the information provided on and dispersed through the course Canvas site. You should be checking Canvas at least once per day.
- **Make a plan.** Plan for when you will review lecture material, work on homework, complete recitation and lab assignments, attend discussion sessions, etc. This will prevent feelings of frustration as well as missed due dates.
- **Don't get behind—complete assignments by their due dates!** Stick to your plan! This course is time-intensive and getting behind can result in a decreased confidence in the material which often translates to lower assignment/exam scores.
- **Work as many problems as you can then work some more.** Chemistry is an application science which means you need to know how to approach and solve problems using your knowledge of the concepts and critical thinking. The only way to be good at this is to PRACTICE! There are many opportunities for this—homework, DSMs, Discussion Sessions, office hours, Chad's Reviews.
- **Participate on the Slack workspace** by asking questions or helping other students. Active engagement in course material with your peers is a great way to learn as many students have very unique perspectives!
- **Take advantage of as many resources as you can.** We are here to help you! However, this means you have to take the first step. Ask a question on Slack, attend office hours, make time for a Discussion Session or Exam Review, complete assignments in the Recitation or Lab meetings, form a study group.
- **Don't wait to reach out!** Don't wait until it is too late to ask for help. Email me any time or post on Slack!

Sources of Help

Dr. Morgan's Office Hours: In addition to my office hours listed above, I am available at other times if there are conflicts with your schedule. Please email me directly (Ashli.Morgan@asu.edu) to set up an appointment!

Slack Workspace: This is a student-moderated forum where you can ask general logistic questions or chapter content/homework questions.

TA/Instructor Office Hours: The recitation and lab instructors/TAs will also be holding office hours and can be a very valuable resource! These hours are listed on the Lab and/or Recitation Canvas site(s).

Instructor-Led Discussion Sessions: These sessions will be led by a General Chemistry Instructor (faculty member) with CHM 114 teaching experience. Attendance at these sessions is voluntary, but strongly encouraged. During these sessions, the Discussion Leader will be prepared to discuss some of the more challenging topics currently being covered in lectures, which may include leading a short discussion or preparing some practice problems to work as a group. Students are also encouraged to bring any online homework problems they are struggling with to these sessions for help. Many sessions will also be recorded and available for you to review online at your convenience.

Your Discussion Session Leader(s) this semester is/are:

TBA

University Academic Success Programs (UASP): UASP offers free tutoring, both in-person and online, and periodic review sessions. You can access their schedule at tutoring.asu.edu

Chad's Reviews: Chad's Reviews are free for ASU students. You can access this resource at <https://chadsreviews.com/>

Barrett Honors Contract

If you are enrolled in Barrett Honors College, you have the ability to complete a project for Honor's credit in this course. Please view the Barrett Honors Project module for more details, then send me an email (Ashli.Morgan@asu.edu) after the first day of class if you are interested to set up an appointment to discuss your project.

Suggested Reading

Use the eBook as a reference for definitions, rules, and problem-solving strategies. The In-Chapter Exercises often provide good examples that illustrate the important concepts.

CHAPTER	SECTIONS	
UNIT 1		
1	1.1 – 1.7	<i>This chapter is only briefly covered in lecture.</i>
2	2.1 – 2.8	<i>You should also read the section on oxidation numbers from Ch. 4 and the basic information on ionic and covalent bonding from Ch. 8. We are skipping Section 2.9.</i>
3	3.1, 3.3 – 3.7	<i>Section 3.2 on combination, decomposition, and combustion reactions will be covered with the other reaction classes in Ch. 4.</i>
4	4.1 – 4.6	<i>Also read Section 3.2 and Section 13.4.</i>
5	5.1 – 5.7	<i>Section 5.8 on bond enthalpies will be covered in Ch. 8. We are skipping Section 5.9.</i>
UNIT 2		
6	6.1 – 6.9	
7	7.1 – 7.7	
8	8.1 – 8.8	
9	9.1 – 9.8	
12	12.3 – 12.9	<i>We are skipping Sections 12.1 – 12.2.</i>
UNIT 3		
10	10.1 – 10.7	
11	11.1 – 11.6	<i>We are skipping Section 11.7.</i>
13	13.1 – 13.5	<i>We are skipping Section 13.6.</i>
15	15.1 – 15.7	
16	16.1 – 16.7	<i>This material will be covered briefly in conjunction with Chapter 15 material.</i>
ON FINAL <i>(Final Exam is cumulative over Chapters 1 – 13, 15/16, 19, 20)</i>		
19	19.1 – 19.7	
20	20.1, 20.3 – 20.9	<i>We are skipping Section 20.2.</i>

Course Schedule

The Final Exam is IN-PERSON. University rules dictate that you must take your Final Exam at the day and time in which it is officially scheduled. Any deviation from this scheduled time must be approved by your Instructor and/or the Dean of the College. At the discretion of your course instructor and the Dean, you may (depending on the circumstances) be allowed to take your Final Exam at an alternate time, however this will result in an automatic penalty of 10% (or 15 points) from the Final Exam score, unless prior approval is granted.

- Some sections will be skipped; these will be announced at the appropriate times during the course.
- Some chapters may take more, or less, time than estimated here. If necessary, recorded lectures will supplement any material that cannot be covered during class.
- Any changes in the syllabus, schedule or details of exam content will be announced in class and/or on Canvas.
- All Chapter Concept Checks (CC) and online MasteringChemistry homework assignments (HW) are due at 11:59 pm MST on the day noted on the schedule.
- Practice Exams (PEX) are due at 11:59 pm MST the day before each exam. Ch. 19/20 PEX is due on 12/04 at 11:59 pm MST.
- Extra Credit DSMs are due at 11:59 pm MST on Monday, 12/04. This means they are open for practice all semester!
- Unit exams will be **online** and open from 6:00 am – 11:59 pm MST so note each exam date on your schedule. Any conflicts must be discussed with me (Ashli.Morgan@asu.edu) **BEFORE** the exam opens.
- Academic Status Reports (ASRs) are submitted after each exam for all students in danger of failing the course.

Please see the detailed course schedule below for all official due dates (also in course modules):

CHM 114 Fall 2023 Schedule

Any changes to the lecture/exam schedule will be announced on the lecture Canvas site.

UNIT	DAY	DATE	LECTURE	LAB	RECITATION
1				NO LABS	
	Th	08/17	Course Introduction, Syllabus Chapter 1		NO RECITATIONS
	F	08/18			
1	M	08/21	<i>Syllabus/Academic Integrity Agreement</i>	Lab 1: Lab Report Writing Activity	
	T	08/22	Chapters 1/2		
	W	08/23	<i>Ch. 1 CC/HW DUE Add Deadline</i>		Syllabus Quiz & Act 1:
	Th	08/24	Chapters 2/3		Measurement, Units & Sig Figs
	F	08/25			
1	M	08/28	<i>Ch. 2 CC/HW DUE</i>	Lab 2: What is Reacting?	
	T	08/29	Chapter 3		
	W	08/30	<i>Drop Deadline</i>		Act 2:
	Th	08/31	Chapters 3/4		Compounds and Nomenclature
	F	09/01	<i>Ch. 3 CC/HW DUE</i>		
1	M	09/04	LABOR DAY OBSERVED	NO LABS	
	T	09/05	Chapter 4		
	W	09/06			Act 3:
	Th	09/07	Chapter 5		Reaction Quantities, Limiting Reactants
	F	09/08	<i>Ch. 4 HW DUE</i>		
1	M	09/11		Lab 3: How is Heat of Neutralization Measured?	
	T	09/12	Chapter 5		
	W	09/13	<i>Ch. 5 CC/HW DUE Unit 1 PEx DUE</i>		Act 4:
	Th	09/14	Online: UNIT 1 EXAM (Ch. 1 – 5)		Thermochemistry
	F	09/15			
2	M	09/18		Lab 4: How Effective is the Acid/Base Titration?	
	T	09/19	Chapter 6		
	W	09/20			Act 5:
	Th	09/21	Chapter 6		Spectroscopy
	F	09/22	<i>Ch. 6 CC/HW DUE</i>		
2	M	09/25		Lab 5: How Much Dye is in a Sports Drink?	
	T	09/26	Chapter 7		
	W	09/27			Act 6:
	Th	09/28	Chapter 8		Molecular Structure, Part 1
	F	09/29	<i>Ch. 7 CC/HW DUE</i>		
2	M	10/02		Lab 6: How are CdS Nanoparticles Prepared?	
	T	10/03	Chapter 8		
	W	10/04			Act 7:
	Th	10/05	Chapter 9		Molecular Structure, Part 2
	F	10/06	<i>Ch. 8 CC/HW DUE</i>		

2	M	10/09	FALL BREAK	NO LABS		
	T	10/10	FALL BREAK—NO CLASS			
	W	10/11			NO RECITATIONS	
	Th	10/12	Chapters 9/12			
	F	10/13	Ch. 9 CC/HW DUE			
2	M	10/16		Lab 7: How does an OLED Work?		
	T	10/17	Chapter 12			
	W	10/18	Ch. 12 CC/HW DUE Unit 2 PEx DUE		Act 8: Simulation of Gas Law Properties	
	Th	10/19	Online: UNIT 2 EXAM (Ch. 6 – 9, 12)			
	F	10/20				
3	M	10/23		Lab 8: How Much Oxygen Gas is Produced?		
	T	10/24	Chapter 10			
	W	10/25			Act 9: Intermolecular Forces	
	Th	10/26	Chapters 10/11			
	F	10/27	Ch. 10 CC/HW DUE			
3	M	10/30		Lab 9: What is the Intermolecular Force?		
	T	10/31	Chapters 11/13			
	W	11/01	Ch. 11 CC/HW DUE Course Withdrawal Deadline		Act 10: Colligative Properties	
	Th	11/02	Chapters 13			
	F	11/03	Ch. 13 CC/HW DUE			
3	M	11/06		Lab 10: How Can Chemical Equilibrium be Manipulated?		
	T	11/07	Chapters 15/16			
	W	11/08			NO RECITATIONS	
	Th	11/09	Chapters 15/16			
	F	11/10	VETERAN'S DAY OBSERVED			
3	M	11/13		Lab 11: How Does a Fuel Cell Car Work?		
	T	11/14	Chapters 15/16			
	W	11/15	Ch. 15/16 CC/HW DUE Unit 3 PEx DUE		Act 11: Thermodynamics	
	Th	11/16	Online: UNIT 3 EXAM (Ch. 10,11,13,15/16)			
	F	11/17				
4	M	11/20		NO LABS		
	T	11/21	Chapter 19			
	W	11/22			NO RECITATIONS	
	Th	11/23	THANKSGIVING OBSERVED—NO CLASS			
	F	11/24	THANKSGIVING OBSERVED			
4	M	11/27		Lab 12: How Can the Identity of Metals be Determined?		
	T	11/28	Chapters 19/20			
	W	11/29	Ch. 19 CC/HW DUE		Act 12: Electrochemistry	
	Th	11/30	Chapter 20			
	F	12/01	Ch. 20 CC/HW DUE Complete Session Withdrawal Deadline			
FINALS WEEK	Extra Credit DSMs/Ch. 19/20 PEx DUE on 12/04					
	T	12/05	In-person: FINAL EXAM (82846) 2:30 pm – 4:20 pm in PSH 150 (REQUIRED)			
	Th	12/07	In-person: FINAL EXAM (75066) 7:30 am – 9:20 am in PSH 153 (REQUIRED)			

General ASU Policies

Course Etiquette

Please remember to turn OFF your cell phone prior to coming to class. Please be respectful of the instructor by raising your hand rather than blurting out a question in the middle of class. Also, please try NOT to talk while your instructor is speaking OR pack up to leave early as it can be very disruptive to everyone else in the room. Do not use your computer or cell phone to browse the Internet during class time; try to remain focused on the material being presented.

The Office of Student Rights and Responsibilities accepts [incident reports](#) from students, faculty, staff, or other persons who believe that a student or a student organization may have violated the Student Code of Conduct.

In accordance with [ACD 304-06 Commercial Note Taking Services](#), written permission must be secured from the official instructor of the class in order to sell the instructor's oral communication in the form of notes. Notes must have the notetaker's name as well as the instructor's name, the course number, and the date.

Academic Status Reports (ASRs)

This course incorporates an early alert reporting system called Academic Status Reports (ASRs) to give you helpful updates throughout the semester. An ASR will let you know if you are progressing well or if there are concerns related to your class performance. Concerns may be related to missing classes, missing assignments, or the quality of your work. ASR notifications will be sent to your ASU email address and are visible on My ASU in the My Classes box. The ASR may provide recommended actions, such as meeting with your instructor, TA, or academic advisor. If you receive an ASR, don't ignore it and keep calm (it might be good news). Read the message, follow the suggested instructions, and don't delay. Information for making an appointment with your academic advisor can be found on My ASU in the Academic Support Team box. Students should view ASRs as confirmation of good work or use them as a catalyst to make changes, seek assistance, and improve in the course.

You can learn more about ASRs on the [Academic Status Report Resources](#) page.

Accessibility Statement

In compliance with the Rehabilitation Act of 1973, Section 504, and the Americans with Disabilities Act as amended (ADAAA) of 2008, professional disability specialists and support staff at the Student Accessibility and Inclusive Learning Services (SAILS) center facilitate a comprehensive range of academic support services and accommodations for qualified students with disabilities. [Qualified students with disabilities may be eligible to receive academic support services and accommodations](#). Eligibility is based on qualifying disability documentation and assessment of individual need. Students who believe they have a current and essential need for disability accommodations are [responsible for requesting accommodations and providing qualifying documentation](#) to the SAILS. Every effort is made to provide reasonable accommodations for qualified students with disabilities. Qualified students who wish to request an accommodation for a disability should contact SAILS by going to <https://eoss.asu.edu/accessibility>, calling (480) 965-1234 or emailing Student.Accessibility@asu.edu.

To speak with a specific office, please use the following information:

ASU Online and Downtown Phoenix Campus

University Center Building, Suite 160
602-496-4321 (Voice)

Polytechnic Campus

480-727-1165 (Voice)

West Campus

University Center Building (UCB), Room 130
602-543-8145 (Voice)

Tempe Campus

480-965-1234 (Voice)

If you are receiving accommodations, please read the information in the SAILS Accommodations module then email me directly (either in the first two weeks of class OR within two weeks of receiving your accommodation) if you have any questions about how I can best facilitate your accommodations in this course. For those receiving flexible attendance/deadlines accommodations, you must fill out the Instructor Agreement at the beginning of the semester and make your accommodation request before 5:00 pm MST on the due date of the assignment or before an exam opens to allow for reasonable accommodations.

Student Conduct and Academic Integrity

Academic honesty is expected of all students in all examinations, papers, laboratory work, academic transactions and records. The possible sanctions include, but are not limited to, appropriate grade penalties, course failure (indicated on the transcript as a grade of E), course failure due to academic dishonesty (indicated on the transcript as a grade of XE), loss of registration privileges, disqualification and dismissal.

For more information, see <http://provost.asu.edu/academicintegrity>. Additionally, required behavior standards are listed in the [Student Code of Conduct and Student Disciplinary Procedures](#), [Computer, Internet, and Electronic Communications policy](#), and outlined by the [Office of Student Rights & Responsibilities](#). Anyone in violation of these policies is subject to sanctions.

[Students are entitled to receive instruction free from interference](#) by other members of the class. An instructor may withdraw a student from the course when the student's behavior disrupts the educational process per [Instructor Withdrawal of a Student for Disruptive Classroom Behavior](#).

In this course, all assignments must be completed by the student. Artificial Intelligence (AI), including ChatGPT and other related tools used for creating of text, images, computer code, audio, or other media, are not permitted for use in any work in this class. Use of these generative AI tools will be considered a violation of the ASU [Academic Integrity Policy](#), and students may be sanctioned for confirmed, non-allowable use in this course.

The Office of Student Rights and Responsibilities accepts [incident reports](#) from students, faculty, staff, or other persons who believe that a student or a student organization may have violated the Student Code of Conduct.

Title IX and Mandated Reporting

Title IX is a federal law that provides that no person be excluded on the basis of sex from participation in, be denied benefits of, or be subjected to discrimination under any education program or activity. Both Title IX and university policy make clear that sexual violence and harassment based on sex is prohibited. An individual who believes they have been subjected to sexual violence or harassed on the basis of sex can seek support, including counseling and academic support, from the university. If you or someone you know has been harassed on the basis of sex or sexually assaulted, you can find information and resources at <https://sexualviolenceprevention.asu.edu/faqs>.

As a mandated reporter, I am obligated to report any information I become aware of regarding alleged acts of sexual discrimination, including sexual violence and dating violence. ASU Counseling Services, <https://eoss.asu.edu/counseling> is available if you wish to discuss any concerns confidentially and privately. ASU online students may access 360 Life Services, <https://goto.asuonline.asu.edu/success/online-resources.html>.

Overrides

Each semester during registration season, many of you may receive requests from students for prerequisite overrides, course full overrides or late add overrides into the classes you are teaching. Faculty cannot approve any of these overrides. Instead, each of these requests is reviewed by our undergraduate advising staff to ensure consistent application of SMS, CLAS and University policies. Please email all override requests to: smsadvising@asu.edu.

Course Material Copyright Protection

Most of the course materials, including video lectures, lecture notes, activities, quizzes and exams, and other materials on Canvas contain copyright components. These are intended for educational purposes. Sharing any of these materials by posting online, or providing to a note-taking service, tutoring/study-aid company, etc., without written permission from the course instructor is prohibited and is grounds for dismissal from the course and referral to the Dean of Students.

Syllabus Disclaimer

The syllabus is a statement of intent and serves as an implicit agreement between the instructor and the student. Every effort will be made to avoid changing the course schedule but the possibility exists that unforeseen events will make syllabus changes necessary. Remember to check your ASU email and the course site often.