Chem 1A Spring 2025 Syllabus

Chemistry: A Molecular Approach, 6th Edition by Nivaldo J. Tro

Term: Spring 2025
Instructor: Dr. Semere Bairu
Class Schedule: Section 11/12 **Lecture**: MW 3:30 pm – 4:45 pm in DA-FOR1
Section 11 Lab: MW 8:30 am – 11:20 am in SC2202
Section 12 Lab: MW 11:30 am – 2:20 pm in SC2202
Office Hours: MW 2:30 pm to 3:15 pm in Part-time Faculty Office (across our lab in 2nd floor)
Holidays: June 19 **-** Juneteenth Holiday - no classes, offices closed
April 20 - Last day to drop classes without a W
May 30 - Last day to drop classes with a W

About the Course

This course is entirely in-person and meets twice a week. Attendance at both sessions is required to improve quiz performance, and punctuality is essential. The course includes **two weekly labs**, which are a required component and must be attended on time. The lecture portion of the course will take place at the specified time, and you are expected to come prepared by completing any assigned materials beforehand.

Lecture and lab sections must be taken together to pass **Chem 1A** and will both go towards a single grade. The course website is on **Canvas** and access to it will be discussed on the first day of class.

Course Webpage

The course webpage is hosted on De Anza Canvas, and students are automatically added to the Canvas shell upon enrolment. Waitlisted students, however, will not have access to Canvas. The webpage is best viewed on a **web browser** rather than the Canvas student app. Be sure to enable **Canvas notifications** to stay updated on class announcements, inbox messages, and comments or feedback on assignment submissions.

Community Statement

Welcome to the class! Every person here is an important and valued member of our group, no matter your personal background or identity. Your experiences matter, and we encourage you to share them when relevant. It's important to know that no one is expected to represent everyone from any group, and you have the right to define your own identity. Feel free to let me know the name you'd like to be called and the pronouns you prefer, and remember, these can change at any time. If you ever feel that any part of the class, whether it's the instruction, content, or environment, is creating obstacles to your full participation, please don't hesitate to let me know privately. There's no fear of reprisal, and I'll do my best to address any concerns. We're all here to learn together, and I'm committed to continually improving to support everyone in this class.

About Your Instructor

Instructor: Dr. Semere Bairu

E-mail: bairusemere@fhda.edu; Phone Number: 269-365-8814 (not preferred)

The most reliable way to contact me outside of class is through **Canvas Inbox**. Generally, you can expect a **reply within 12 hours**.

Office hours

Office hours are a great opportunity to meet with me outside of regular class time. You can bring your homework, notes, readings, or any other assignments to discuss. Feel free to ask questions about course material, practice problems, or anything related to your educational journey. My office hours are open to all students, and you're welcome to stop by in person every **Monday and Wednesday** from **2:30 PM to 3:15 PM;** in Part-time Faculty Office (across our lab in 2nd floor). I look forward to meeting with you.

My Teaching Philosophy

My goal for this course is for every student to develop an appreciation for the power of general chemistry and the beauty of the natural world, particularly as it relates to chemistry. I hope you will gain a deeper understanding of how chemistry influences everyday life and fosters a greater curiosity about the world around you.

I aim to create a learning environment that is accessible to students from diverse educational, cultural, and socioeconomic backgrounds while maintaining high intellectual and academic standards. I value consistent, sustained effort throughout the quarter, and I am committed to helping each student succeed. My ultimate objective is for every student to pass with a reasonable grade, ensuring you are equipped to continue your educational or career journey.

Course Description

This course offers an introduction to chemistry as the **first of a three-quarter general chemistry series**. This course will cover how we measure the properties of matter and describe the structure of atoms in the context of basic quantum mechanics. We discuss the types of chemical bonds that atoms undergo to form more complex molecules, the ratios in which atoms combine, and the shapes these molecules assume in space. Additionally, we will cover important models for covalent bonding and explore the many types of chemical reactions. The way in which molecules react to form new bonds, and thus new molecules, will be connected to the transfer of heat energy and bond stability.

Dr. Bairu's Course Description

CHEM 1A is an introductory course in general chemistry designed for students majoring in science, engineering, and related fields. This course provides a comprehensive foundation in the fundamental concepts of chemistry, including atomic structure, chemical bonding, stoichiometry, thermochemistry, and the properties of solutions. Laboratory sessions provide hands-on experience and reinforce lecture material through experiments and demonstrations. Emphasis is placed on developing problem-solving skills, understanding chemical principles, and applying them to real-world scenarios. This course is designed to prepare students for advanced study in chemistry and related scientific disciplines.

Required Materials

Textbooks: Chemistry - Modified Mastering Chemistry with Pearson eText - Access Card - for Chemistry: A Molecular Approach (6th Edition) *Tro* ISBN: 9780137831968 will be used this quarter. It is accessible via Canvas through **Access Pearson** after purchasing the access code.

Lab Handouts: Laboratory handouts will be **uploaded to Canvas**. It is your responsibility to bring a printed copy to the lab for ease of use, safety, and so that you can easily record your results**.**

Computer and Printer Access: It is strongly recommended that you have **regular and consistent access to a computer with a camera and microphone**. You will also need to be proactive in reaching out to technical and support services for the many platforms that we use. Start your work early so that you do not fall behind.

Scanner: Throughout the quarter, you will submit handwritten reports by creating a PDF and uploading it to Canvas especially for the lab. Recommended apps for this purpose include GeniusScan and CamScanner. Please avoid using Adobe apps, as the resulting files are often too large to read. Make sure all documents are scanned and combined into a single PDF file with a clear file name. I do not accept multiple image files, as it is difficult to grade them online in Canvas.

Lab Goggles: Eye protection is essential Personal Protective Equipment (PPE). You must bring department-approved ANSI (Z.87) lab goggles to each lab period.

Access Pearson: We will use Pearson Access for Mastering Chemistry as our reading platform (e-text) as well us for quizzes, homework, practices and assignments this quarter. Please purchase the etextbook with mastering chemistry as mentioned in my first announcement. You will have courtesy access through the second week of the quarter. By then, you should purchase an access code either directly from Pearson or through the campus bookstore.

Enrolment

Prerequisites: CHEM 25 or CHEM 30A or satisfactory score on the Chemistry Placement Test; and intermediate algebra or equivalent (or higher), or appropriate placement beyond intermediate algebra

It is recommended that students have taken Chem 25 or Chem 30A in-person at De Anza College within the past six months. If your recent chemistry background does not align with this, I strongly encourage you to reach out early and frequently to me, as well as to campus tutoring and academic support services, if any issues arise.

Add Codes Policy

Add codes will only be provided if space is available during the first week of class for waitlisted students. If you're interested in joining, you must attend first two lectures. If you miss the first lecture as a waitlisted student, priority will be given to someone who attended. However, no waitlisted students are allowed to attend a lab. **Add codes will not be given out after the first week of class**. If you are on the waitlist, I strongly encourage you to enrol in an open section instead.

Similarly, if you are enrolled in the course and miss the first lecture and lab meeting, you will be dropped from Chem 1A.

Time Commitment and Expectation

This is a **5-unit course**, and you should plan to dedicate approximately **15 hours per week to class assignments**. To avoid becoming overwhelmed, divide this workload throughout the week and establish a consistent time and place to focus on class materials daily.

Course Objectives

We will cover the following topics in Chem 1A:

- Understand how to measure the properties of matter and describe atomic structure using basic quantum mechanics.
- Explore the types of chemical bonds atoms form to create more complex molecules.
- Learn about the ratios in which atoms combine to form compounds.
- Investigate the shapes that molecules adopt in space.
- Study important models for covalent bonding.
- Examine the different types of chemical reactions.
- Connect molecular reactions to the transfer of heat energy.
- Understand the role of bond stability in chemical reactions and molecule formation.

Student Learning Outcomes (SLOs):

- Identify and explain trends in the periodic table.
- Construct balanced reaction equations and illustrate principles of stoichiometry.
- Apply the first law of thermodynamics to chemical reactions.

Active Course Outline

The active course outline for this class may be found online at:
https://www.deanza.edu/catalog/courses/outline.html?cid=chemd030b

Important Dates

First Day: April 7, 2025 - First day of class! Attendance is *mandatory*.

Withdraw: May 30, 2025 - Last day to withdraw from the course.

For a full list of important dates, please see https://www.deanza.edu/calendar/

If circumstances beyond your control prevent you for completing the course, you may qualify for an **excused withdrawal**. Please see the following website for more information.

https://www.deanza.edu/admissions/withdrawals.html

Attendance Policy

Your punctual attendance is expected at all class meetings. To be marked "present" and receive credit for the day's activities, you must **arrive within the first 5 minutes of class**. Late arrivals may result in missing important information.

If you need to miss a class for any reason, notify me via **Canvas Inbox** as soon as possible. Communicating about absences or tardiness reflects responsibility and respect for yourself and your fellow students.

In the case of a documented emergency (e.g., hospitalization, court appearance, or car crash), I may excuse you from that day's work. These situations will be evaluated on a case-by-case basis. Please note that travel is not considered an emergency or valid grounds for an excused absence.

It is the student's responsibility to obtain notes or missed information from a classmate.

Syllabus Statement

This syllabus serves as a contract for the course. Please read it thoroughly and completely before asking questions about the course schedule, content, requirements, grading, or other details. You are expected to adhere to the De Anza College Student Code of Conduct (Administrative Policy 5510) at all times. *Find the pdf document in canvas.*

This syllabus is a living document and subject to updates. Any corrections or changes will be communicated through Canvas.

Class Structure

This course consists of two in-person instructional periods: a lecture period (MW) for covering the primary course material and lab periods (MW) for conducting experiments. **All students attend the same lecture but different lab sessions**, as there are two lab sections. At De Anza College, the lab and lecture cannot be taken as separate courses under any circumstances.

Late Work Policy

Most assignments must be submitted on Canvas or Mastering Chemistry (Pearson) site. Late work will be accepted until **the last Wednesday before the final exam at 11:59 PM**, with **a 10% deduction per day until a maximum of 60% deduction**. To qualify for the late penalty, the work must be your own.

If you would like the late policy reconsidered for a specific assignment, include a **submission comment** explaining your circumstances. I will review your comments and take them into consideration. Please note, **I do not grant extensions or exceptions via email or Canvas Inbox**. **Submit the assignment when possible and include your explanation in the submission comment.**

How to Learn Chemistry

Chemistry is a broad subject with a reputation for being challenging. This class will leverage various resources to help you build the skills, knowledge, and understanding needed to apply chemical principles across multiple areas of study. Lectures will provide structure and context for the topics, while assigned readings will help you explore the details in depth.

How to Succeed in This Course

- **Attend all class sessions**: Be punctual and actively participate in both lecture and lab sessions.
- **Stay organized**: Keep track of deadlines, assignments, and exam dates using a planner or digital calendar.
- **Review material regularly**: Study lecture notes, readings, and lab material consistently throughout the week.
- **Complete assignments on time**: Submit all work on Canvas/Mastering Chemistry by the deadlines to avoid late penalties.
- **Ask for help**: Reach out to me during office hours, or via Canvas Inbox with questions. Utilize campus tutoring and academic support services if needed.
- **Form study groups**: Collaborate with classmates to review material, work on practice problems, and discuss challenging concepts.
- **Practice problems**: Work through practice problems to strengthen your understanding of the material and prepare for exams.

- **Use recommended tools**: Ensure you have the required scientific calculator and PDF scanner app for assignments.
- **Communicate proactively**: Notify me in advance of any issues or absences and provide explanations for late submissions when necessary.

Academic Integrity

Academic integrity is essential in this course, and students are expected to **adhere to De Anza College's academic integrity policy**. All submitted work must represent your own understanding, written in your own words, with collaboration only allowed on specific assignments where the final submission reflects individual effort. Cheating, copying, or plagiarism, including the use of prohibited online resources such as Chegg, CourseHero, or Reddit, is strictly forbidden. Assessments are closed resource, and using internet answers or unauthorized help is not allowed. Incidents of academic dishonesty, no matter how minor, will be reported to the Dean and may result in penalties to your course grade, including retroactive grade changes within two years of course completion. Reputable tutoring resources are encouraged, but services that provide direct answers without promoting learning are prohibited. Students should seek clarification about resources or policies when unsure and are encouraged to engage with the instructor and peers for support. Violations may lead to significant changes in course structure, such as oral exams or exit interviews, to ensure academic standards are maintained.

Lecture

Attendance and active participation are expected at every lecture. If you are unable to attend, notify me via email as soon as possible, even if it's shortly before or after class starts. You are responsible for obtaining notes or missed information from a classmate. **Arrive on time and stay for the entire class**, as late arrivals and early departures can be distracting for everyone.

Take your own notes during lectures for better engagement and understanding. While we may use **electronic devices** for certain activities, refrain from using them for non-course-related purposes. Ensure your phone is on **silent or Do Not Disturb mode** during class. In case of an emergency call, quietly step out of the room before answering.

Mastering Chemistry Homework Guidelines

Homework questions for each chapter are available under Mastering Chemistry (via Pearson Access). You can also access the homework through the **Modules** section (linked to Mastering Chemistry). These assignments are designed to support your learning and prepare you for exams.

You will have up to three attempts to answer each question of the homework assignment, with a penalty of **10% after your first attempt**, allowing you to practice and strengthen your understanding. Assignments are subject to a **penalty of up to 10% per day, with a maximum penalty of 60%.** Be sure to stay on track and complete your assignments on time to maximize your success in the course.

Recommended Practice Problems

Consistent practice is essential for mastering the material. In addition to required quizzes and homework assignments, additional practice problems (**end-of-chapter quizzes and problems**) from the eTextbook are available for you. While these practice problems will not be graded, we will review some of them weekly during class, as they are crucial for your success.

To further reinforce your understanding, a graded quiz will be administered once a week, based on the content covered for a particular chapter. Mandatory in-person attendance is required for these

sessions, providing valuable opportunities to address questions and strengthen your understanding. Regular engagement and consistent practice are vital to your success in this course.

Assessments

Quizzes and Exams Policy

There will be **10 quizzes** conducted throughout the quarter, typically during class after reviewing practice problems - if time allows.

Two midterm exams will be conducted during the course. Midterm Exam 1 is scheduled for **May 5, 2025**, and Midterm Exam 2 will take place on **June 9, 2025**. Please refer to the study guides below for preparation for both exams. All exams will be conducted in person, proctored, and subject to exam rules, which must be followed to receive credit

Exam 1 covers *Chapter 1, 2, 3, & 4.*

Exam 2: Covers *Chapter 5, 7, 8, & 9.*

Final Exam: Comprehensive and it Covers

- Exam 1 contents *(20%) - Review Chapters 1 to 4*
- Exam 2 contents *(20%) - Review Chapters 5 to 9*
- Chapter 10 & 11 (*60 %)*

Final Exam

The final exam is sort of comprehensive, with 40% focusing on contents from the first two exams and 60% exclusively covering chapter 10 and 11. The exam will be conducted in person, proctored, and subject to exam rules, which must be followed to receive credit. The final exam is scheduled for **Wednesday June 25, 2025, from 7:00 AM to 9:00 AM.** Early or late exams will not be offered, and missing an exam will result in a score of zero.

If you **require accommodations**, you must be approved by **DSPS**, (https://www.deanza.edu/dsps/). For extended-time or reduced-distraction accommodations, you must schedule your exam with the DSPS office to coincide with the normal class time. The final exam will include multiple-choice and short-answer questions. To receive credit for any answer, you must clearly show your work and thought process. Plan to meet these requirements and ensure your success on the final exam

Phones, smart watches, and other computers are not permitted in any circumstances. If I see you on your phone or other electronic device, you will receive a **zero on the exam**. The first two exams will be administered during the scheduled lecture time. The final exam will be administered during the designated final exam period above and will take place at the same lecture location.

Laboratory

Laboratory Policies

Chemistry is an experimental science, and the laboratory is a vital component of this course. De Anza College does not offer make-up labs, and you must attend the laboratory section for which you are registered to complete the required labs.

- **Attendance**: Everyone is allowed **one excused absence without a grade penalty**. A second absence, regardless of the reason for the first, will result in a zero for the lab and all

associated assignments. **After a third lab absence, you will automatically receive an "F"** in the course.

- **Timeliness**: Arrive on time for every lab. The beginning of the lab period is reserved for a pre-lab quiz and required lab lecture that includes essential safety information. If you miss the lab lecture, you will not be permitted to complete that lab and will receive a zero for all related assignments.
- **Clean-Up and Check-Out**: You must clean your work area before leaving. Failure to do so will result in a point deduction for that lab. Before leaving, you must check out with me and have your data in your lab notebook/handout signed. Credit for the lab will not be given without my signature.
- **Lab Assignments**: Assignments include pre-labs, conducting experiments with accurate data collection, and analyzing data thoughtfully.

Adhering to these policies is crucial for both your success and the safe functioning of the lab.

Lab Safety

Safety Contract: All students must review, print, sign, and scan the safety contract into a PDF format before participating in any lab activities. The contract is available on Canvas and must be uploaded to Canvas by the end of the first lab day. Retain the original signed copy for your reference throughout the course. This requirement is mandatory, and students who fail to submit the contract will be excluded from all lab activities until compliance is met. Safety is a top priority, and adherence to these rules is non-negotiable**.**

Safety Video: You are required to watch the designated safety video playlist, which will be available on Canvas, at the beginning of the quarter, regardless of whether you have viewed the videos in a previous class. I will show the videos during the first lab session as part of the safety orientation and prior to lab check-in. Watching the safety videos is mandatory, and failure to comply will result in exclusion from lab activities until this requirement is fulfilled.

Safety Quiz: You must complete and pass the safety quiz, and the questions are based on the watched safety video, which will be available on Canvas, with a **100% score** prior to participating in any wet lab activities. This is a mandatory requirement to ensure lab safety.

Lab Handouts and Assignments

All required lab handouts are available on Canvas under Modules. You are required to **print and bring these handouts** to the lab for use. These handouts provide detailed instructions and essential information for each lab experiment. The nature of each assignment and the points available will vary based on the specific lab activity. Failure to bring the required handouts may impact your ability to successfully complete lab activities.

Pre-lab Assignments

Pre-lab assignments are designed to prepare you for each lab session and will vary by experiment. These assignments typically include assigned reading, safety preparation, and an introduction to the experiment. **To prepare for the pre-lab assignments, use the background notes provided in the handouts to thoroughly answer the pre-lab questions.** Each completed pre-lab assignment is **worth 5 points**, so be sure to put in the necessary effort to earn full credit and set yourself up for success in the lab. You will need either an **iPad or laptop** to answer the questions online. An **access code** will be provided, which will allow you to take the quiz during the first 5-10 minutes of the lab period.

Post-lab Assignments

Lab reports are a critical component of your lab work, designed to help you analyze and communicate the results of each experiment. Each lab report is **worth 20 points**, so it is important to put in the necessary effort to produce high-quality work.

When completing your lab reports, ensure that you carefully review the handouts provided for each experiment and **answer every question** included in the report. Do not leave any question unanswered.

All responses must be written in complete sentences and should clearly address the subject matter. Avoid vague or incomplete answers; instead, provide detailed, thoughtful, and accurate explanations. Your lab report should reflect your understanding of the experiment, including its objectives, methodology, results, and conclusions. Thorough and well-written lab reports are essential for earning full credit and demonstrating your mastery of the material.

Lab Preparation and Submission Guidelines

- **Preparation**: You are expected to arrive at the lab fully prepared to complete each experiment efficiently and with minimal delays.
- **Submission**: Lab reports must be submitted on Canvas as a single PDF file upload (no multiple pdf or images accepted) and are due 3 days after the lab is completed. For labs with two sessions, the submission deadlines are as follows: a lab completed on Monday is due the following Friday, while a lab completed on Wednesday is due on Sunday.
- **Grading**: Refer to the **Canvas submission rubric** to understand how your lab assignments will be evaluated before submitting your work.

Class Schedule

Course Content and Schedule: Chem 1A will cover material from *Chapters 1–11 of* Chemistry: A Molecular Approach, 6th Edition by Nivaldo J. Tro. Throughout the quarter, we will also review topics from Chem 25 or Chem 30A to reinforce foundational knowledge. Detailed reading assignments for each topic will be posted on Mastering Chemistry, and students are expected to stay up to date with the readings.

Every effort will be made to adhere to the class schedule provided below. However, if we fall significantly behind, the content of the exams will be adjusted to align with the material covered in class. Please note that exam dates will remain fixed unless extraordinary circumstances require a change. Staying current with the schedule, readings, and lectures is critical for success in this course. Regular updates and any necessary adjustments will be communicated through **Canvas Announcements**.

Lecture Schedule

Week	Monday	Wednesday
1	**Mastering Chemistry Enrolment** ***(1st 15 min)*** **Chapter 1:** Matter, Measurement, and Problem Solving	**Chapter 1:** Matter, Measurement, and Problem Solving; **Quiz 1**
2	**Chapter 2:** Atoms and Elements	**Chapter 2:** Atoms and Elements; **Quiz 2**
3	**Chapter 3:** Molecules and Compounds	**Chapter 3:** Molecules and Compounds; **Quiz 3**
4	**Chapter 4:** Chemical Reactions and Chemical Quantities	**Chapter 4:** Chemical Reactions and Chemical Quantities; **Quiz 4**
5	**Exam 1 (May 7); Chapter 1, 2, 3 & 4 3:30 pm – 4:30 pm**	Chapter 5: Introduction to Solutions and Aqueous Reactions
6	**Chapter 5:** Introduction to Solutions and Aqueous Reactions; **Quiz 5**	**Chapter 7:** Thermochemistry
7	**Chapter 7:** Thermochemistry **Quiz 6**	**Chapter 8:** The Quantum-Mechanical Model of the Atom
8	**Chapter 8:** The Quantum-Mechanical Model of the Atom**; Quiz 7**	**Chapter 9:** Periodic Properties of the Elements
9	**Chapter 9:** Periodic Properties of the Elements; **Quiz 8**	**Chapter 10:** Chemical Bonding I: The Lewis Model
10	**Exam 2 (June 9); Chapter 5, 7, 8 & 9 3:30 pm – 4:30 pm**	**Chapter 10:** Chemical Bonding I: The Lewis Model, **Quiz 9**
11	**Chapter 11:** Chemical Bonding II: Molecular Shapes, Valence Bond Theory, and Molecular Orbital Theory	**Chapter 11:** Chemical Bonding II: Molecular Shapes, Valence Bond Theory, and Molecular Orbital Theory; **Quiz 10**
12	**Final Exam: Comprehensive - Wednesday June 25, 7:00 am to 9:00 am in DA-FOR1**	

See Lab Schedule and Grading Policy Below.

Laboratory Schedule

WEEK OF	WEEK	MONDAY	TUESDAY	WEDNESDAY	THURSDAY
4/6/2025	1	CHECK-IN		MEASUREMENT (NO PREP)	
4/13/2025	2	NOMEMCLATURE (NO PREP)		HYDRATE (1)	
4/20/2025	3	HYDRATE (2)		TYPES OF REACTIONS (1)	
4/27/2025	4	TYPES OF REACTIONS (2)		PRECIPITATION (1)	
5/4/2025	5	PRECIPITATION (2)		PRECIPITATION (3)	
5/11/2025	6	CONDUCTIVITY (1) (VERNIER)		CONDUCTIVITY (2) (VERNIER)	
5/18/2025	7	ACID-BASE TITRATION (1)		ACID-BASE TITRATION (2)	
5/25/2025	8	MEMORIAL DAY		CALORIMETRY (1) (VERNIER)	
6/1/2025	9	CALORIMETRY (2) (VERNIER)		REDOX TITRATION (1)	
6/8/2025	10	REDOX TITRATION (2)		LINE SPECTRA	
6/15/2025	11	MOLECULAR MODEL		CHECK-OUT / LAB FINAL EXAM	
6/22/2025	12	FINALS (NO LAB)		FINALS (NO LAB)	

Grading Policies and Schemes

To succeed in this course, you will need to exhibit ***consistent and sustained effort*** throughout the quarter. This will be demonstrated through in-class participation, laboratory preparation and data analysis, and examinations. Assignment types are assigned a weight; not all points are created equally!

Lecture	**70.0 % of total grade**
10 Pearson Homework's (200 pts.) - Online via Pearson	20.0 %
3 Exam (350 pts.) – In-person and on Paper	35.0 %
2 Worksheets (50 pts.) – Upload to Canvas (Exam Prep.)	5.0 %
10 In-class Quizzes (100 pts.) – In-person via Canvas Quiz	10.0 %
Laboratory	**30.0 % of total grade**
11 Pre-labs (55 pts.) – In-person via Canvas Quiz	5.5 %
11 Lab report (220 pts.) – Upload to Canvas	22.0 %
1 Lab Final Exam (25 pts.) – In-person and on Paper	2.5 %

Final Percentage	**Grade**
> 100	A+
> 90	A
88 – 89.9	A-
85 – 87.9	B+
80 – 84.9	B
78 – 79.9	B-
75 – 77.9	C+
68 – 74.9	C
63 – 67.9	C-
55 – 62.9	D
<55	F

Student Learning Outcome(s):

- Identify and explain trends in the periodic table.
- Construct balanced reaction equations and illustrate principles of stoichiometry.
- Apply the first law of thermodynamics to chemical reactions.

Office Hours:

F	8:00 AM - 9:00 AM	Zoom
F	9:00 AM - 10:00 AM	Zoom