

South Plains College
Common Course Syllabus: CHEM 1406
Revised August 2026

Department: Science

Discipline: Chemistry

Course Number: CHEM 1406

Course Title: Introduction to Chemistry I

Instructor:

Dr. Laci Alexander

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Office Hours: Monday: 8:30 am – 9:30 am

Tuesday: 8:30 am – 9:30 am; 1:30 pm – 2:30 pm

Wednesday: 8:30 am – 9:30 am

Thursday: 8:30 am – 9:30 am; 1:30 pm – 2:30 pm

Friday: 9 am – 11 am

You may also make an appointment for office hours using the following link:

[Calendly Office Hours](#)

Available Formats: internet, face-to-face, dual credit

Campuses: Levelland

Course Description: Survey course introducing chemistry. Topics may include inorganic, organic, biochemistry, food/physiological chemistry, and environmental/consumer chemistry. Designed for allied health students and for students who are not science majors. Basic laboratory experiments supporting theoretical principles presented in lecture; introduction of the scientific method, experimental design, data collection and analysis, and preparation of laboratory reports. This course may not be substituted for CHEM 1411.

This course partially satisfies a Core Curriculum Requirement:

Life and Physical Sciences Foundational Component Area (030)

Prerequisite: Can NOT be substituted for CHEM 1411. Recommended course for students preparing for education, nursing and other allied health fields (NOT pre-professional fields).

Credit: 4 Lecture: 3 Lab: 3

Materials:

No additional materials are required for this course

Supplies:

Calculator – Required, must be scientific, **CELL PHONES NOT ALLOWED**

Core Curriculum Objectives addressed:

- **Communications skills**—to include effective written, oral and visual communication
- **Critical thinking skills**—to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information
- **Empirical and quantitative competency skills**—to manipulate and analyze numerical data or observable facts resulting in informed conclusions
- **Teamwork**—to include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal

Student Learning Outcomes:

From Lecture:

1. Convert units of measure and demonstrate dimensional analysis skills
2. Define the fundamental properties of matter and classify matter, compounds, and chemical reactions.
3. Determine the basic nuclear and electronic structure of atoms.
4. Distinguish between ionic and covalent compounds and name the different compounds.
5. Identify trends in chemical and physical properties of the elements using the periodic table.
6. Determine the role of energy in physical and chemical reactions.
7. Use the mole concept to determine the number of atoms, moles, grams, and solve elementary stoichiometry-based calculations.
8. Determine the concentrations of solutions using percentage and molarity designations.
9. Use various characteristics of a solution to identify it as an acid or base.
10. Identify and name various organic compounds.
11. Identify and explain the functions of carbohydrates, lipids, and proteins.

From Lab:

1. Use basic apparatus and apply experimental methodologies used in the chemistry laboratory.
2. Demonstrate safe and proper handling of laboratory equipment and chemicals.
3. Conduct basic laboratory experiments with proper laboratory techniques.
4. Make careful and accurate experimental observations.
5. Relate physical observations and measurements to theoretical principles.
6. Interpret laboratory results and experimental data, and reach logical conclusions.
7. Record experimental work completely and accurately in laboratory notebooks and communicate experimental results clearly in written reports.
8. Design fundamental experiments involving principles of chemistry.
9. Identify appropriate sources of information for conducting laboratory experiments involving principles of chemistry.

Student Learning Outcomes Assessment: 2-3 questions from each semester will be randomly selected from the regular exams. These will pertain to a pre-selected topic and will be used to determine the extent of improvement that the students have gained during the semester.

Course Evaluation:

Exams & Academic Integrity

Major Exams (5 Total)

- There will be five major exams, each worth 100 points.
- All exams consist of multiple-choice questions.
- No make-up exams will be given — please plan ahead and communicate early if an emergency arises.
- Your lowest exam grade will be dropped at the end of the semester *after* the final exam. The final exam can be dropped.
Note: A zero due to cheating or a missed final exam cannot be dropped.

Academic Integrity

- Honesty is essential in this course.
- If a student is caught cheating on any exam, they will receive a zero (0) for that exam.
- The student will also be required to take the Final Exam, regardless of their current average.
- In cases of cheating, the zero cannot be replaced by the Final Exam score.

Comprehensive Final Exam

- The Final Exam is required for all students.
- It will include 50 multiple-choice questions, worth 100 points, with the possibility of bonus points.
- The Final Exam grade may be used as the dropped exam if it benefits your overall average—unless a zero was earned for misconduct or absence.

Exam Make-Ups

- **Lecture Exams:** No make-up exams will be allowed. Due to the exam being open for a weeks time. Please do not wait until the last minute for these exams.
- **Final Exam:** Final exam times are set by the college, not by me. If you must miss the final due to serious, unavoidable circumstances, contact me immediately so we can make arrangements. A final exam make-up must be completed by **3:00 PM on Thursday of final exam week** or it will be recorded as a zero.

Remember: Exams are not meant to trick you—they're designed to highlight what you've learned and how you're growing as a problem solver. With consistent effort, preparation, and the resources provided, you'll be ready to succeed.

Study Habits & Success Tips

Success in chemistry comes from **steady effort, curiosity, and practice**—not just memorization. Here are some proven strategies to help you do your best in this course:

1. Stay Engaged During Online Lectures

- Come prepared and ready to take notes each time you listen to a lecture.
- Ask questions—if something doesn't make sense. Think about it, google an answer, but most importantly reach out to me! Let me help answer questions even though I am not personally there in the room.

2. Review Frequently

- Spend **15–20 minutes each day** reviewing your notes.
- Rework example problems without looking at the solution.
- Make your own flashcards for terms, equations, and concepts.

3. Practice, Don't Just Read

- Chemistry is learned by **doing problems**, not by rereading notes.
- Practice from homework, worksheets, and textbook problems.
- Focus on *why* each step is taken—understanding leads to long-term mastery.

4. Build Concept Connections

- Always connect what you learn in lecture to **real-life examples** or **lab experiences**.
- Ask yourself: *"What does this concept explain in the world around me?"*

5. Use Your Resources

- Visit **office hours** or **email Dr. Alexander** if you're stuck—don't wait until exam week.
- Form a **study group** and teach one another. Teaching is one of the best ways to learn!
- Explore online tools and apps listed under the **Course Resources** section on Blackboard.
- Use SPC resources for tutoring options.

6. Manage Time & Rest

- Don't cram! Spreading study time throughout the week helps your brain retain information better.
- Take short breaks, stay hydrated, and get enough sleep before exams.

7. Keep a Positive Attitude

- Chemistry can be challenging, but every concept mastered is a victory. Stay curious, ask for help when needed, and remember—**progress matters more than perfection**.

Laboratory Experiments & Safety

Virtual & At-Home Laboratory Format

In this course, laboratory work will be completed through a combination of virtual demonstrations and at-home experiments using your approved lab kit.

- Some experiments will require you to use materials from your at-home lab kit to safely perform guided investigations on your own.
- After completing the lab (virtual or at-home), you will submit the corresponding lab assignment and calculations in Blackboard.
- Every lab is designed to help you:
 - Understand experimental techniques and data analysis

- Strengthen your problem-solving skills
- See how chemistry applies to real-world systems and everyday life

Deadlines & Make-Up Policy

- All labs must be submitted by the posted due date.
- No late work will be accepted. Due dates are firm to keep everyone on track.
- Missed labs receive a zero.
- Make-up labs are not available, since each lab builds on specific recorded demonstrations.

Virtual & At-Home Lab Safety and Good Lab Practices

Even though some of our labs are completed virtually or with an at-home kit, it's still essential to develop safe, professional, and responsible laboratory habits. These practices will not only keep you safe but also prepare you for future college-level or professional lab work.

Practice Good Lab Etiquette

- Watch each lab video carefully and attentively, just as if you were in the on-campus lab. If a video is not available read the directions very carefully.
- Keep a clean, organized workspace before beginning any at-home experiments.
- Take detailed notes during demonstrations or while working—record observations, data, and any safety precautions mentioned.
- Treat each virtual or at-home experiment with the same seriousness and professionalism as an in-person lab.

At-Home Lab Kit Safety Guidelines

Some experiments will use your at-home lab kit. To ensure your safety and the safety of those around you:

- Read all instructions carefully before beginning any experiment.
- Wear safety gear at all times when handling chemicals or performing experiments.
 - Safety goggles, gloves, and protective clothing are required where indicated.
- Work in a well-ventilated area, away from food, pets, and children.
- Never taste, touch, or directly smell any chemicals or materials unless specifically instructed to do so.
- Label and store all materials properly after use, keeping them out of reach of children and pets.
- Dispose of materials responsibly following the disposal instructions in your lab kit or lab manual. Do not pour chemicals down the drain unless instructed.
- Clean your workspace thoroughly after completing your experiment.
- Immediately report any accidents, spills, or unexpected reactions to your instructor through email or Blackboard messages.

Safe Conduct for All Virtual or Hands-On Labs

- Always follow safety directions provided in the video, handout, or lab manual.
- Never mix household products or chemicals unless explicitly directed by your instructor.
- Protect your space and surfaces with newspaper or paper towels to prevent staining or damage.
- Wash your hands thoroughly after completing any experiment, even if you only used common materials.

Academic Integrity in Laboratory Work

Integrity is essential in all scientific work.

- All data, calculations, and analysis must be your own.
- Copying another student's data or answers, or submitting shared lab work, is considered academic dishonesty.
- Any violation will result in a zero (0) for the assignment and will be handled according to SPC's Academic Integrity Policy.

Course Policies and Expectations

Grading Breakdown

Your final grade will be calculated as follows:

- Exams 50% (lowest grade dropped)
- Homework 20% (lowest grade dropped)
- Discussion/Journal Entries 10%
- Labs 20% (lowest grade dropped)

Chapter Homework

Each chapter will include a **homework assignment posted in Blackboard**.

- All assignments will be **submitted through Blackboard**, where you can upload your completed work and view instructor feedback.
- Homework assignments are designed to help you **reinforce key concepts**, practice problem-solving, and prepare for upcoming exams.
- Staying consistent with these assignments is one of the best ways to build confidence in chemistry!

Discussion Boards

Engaging with your classmates is an important part of learning chemistry! Discussion boards give you a place to share ideas, ask questions, and connect concepts to real-world applications.

- Throughout the semester, you will participate in discussion forums posted on Blackboard.
- Each discussion board will include a prompt related to current course topics.
- You are required to:
 1. Post your own response to the discussion prompt, and
 2. Respond thoughtfully to at least two classmates' posts.

Expectations for Quality Participation

- Your initial post should demonstrate understanding, effort, and originality—avoid one-sentence answers.
- Responses to classmates should be respectful, encouraging, and add value to the conversation (e.g., asking a question, giving an example, or explaining a related idea).
- Always use professional, courteous language, just as you would in class.

Why This Matters

Discussion boards are designed to help you:

- Practice explaining chemistry concepts in your own words,
- Learn from different perspectives, and
- Build a supportive learning community with your peers.

Active participation will make the course more engaging—and it's a great way to reinforce what you're learning each week!

Dropped Grades

To support student success, your **two lowest grades** from the combined pool of **homework and lab assignments** will be **automatically dropped** at the end of the semester.

- Dropped grades help account for life's unexpected challenges—but remember, **tests and discussion boards cannot be dropped**.
- Stay consistent throughout the term to make the most of this policy!

Late Work Policy

No late work will be accepted—no exceptions.

This course moves quickly, and assignments build on one another. Staying on schedule is key to your success.

- **All due dates are firm** for homework, labs, and tests.
- Blackboard automatically record when assignments are accessed, started, and submitted.
- Plan ahead and **don't wait until the last day** to begin your work—chemistry takes time to practice and absorb.

Tip: Set reminders in your phone or planner at least 24 hours before each due date to keep yourself on track!

Technology, Communication, and Academic Integrity

Technology Requirements

Because this course includes online components and digital submissions, you'll need access to reliable technology throughout the semester. Being prepared ensures a smooth experience and helps prevent last-minute stress.

Minimum Requirements

You'll need:

- A reliable laptop or desktop computer (not just a phone or tablet) with:
- A Pentium processor or equivalent (Windows XP or newer, or updated macOS)
- At least 2 GB of storage space
- An updated web browser (Google Chrome is most compatible with Blackboard and MasteringChemistry; Firefox or Safari also work—please avoid Internet Explorer)
- Sound card and speakers for watching recorded videos
- Webcam and microphone for remote proctoring (if required)
- High-speed internet connection – consistent, reliable access is crucial for streaming lectures and submitting assignments.
- Required software:
- Microsoft Word, PowerPoint, and Excel (available free through your SPC account)
- Windows Media Player or another up-to-date media player
- PDF viewer such as Adobe Acrobat Reader

Useful apps:

- Adobe Scan, Microsoft Lens, or CamScanner – to scan handwritten work into PDFs
- OneDrive – to save backups of your work
- Blackboard App – to check announcements and due dates (use a computer for submissions or exams)

Technology Tips

- Know your tools. Be familiar with downloading files, uploading assignments, managing pop-up blockers, and saving documents.
- Plan ahead. Tech issues aren't accepted as excuses for late work. Always submit early and have a backup plan (campus computer labs are available at Levelland and Reese).
- Check your gear. Make sure your webcam and internet are working before exams.
- If you experience persistent technical issues, contact the SPC Help Desk or Blackboard Student Support at blackboard@southplainscollege.edu | 806.716.2180

Course Format & Time Commitment

This course is fully online and delivered through Blackboard.

- Expect to spend 4–6 hours per week reading, watching videos, completing assignments, and taking quizzes or exams.
- Self-discipline is key — stay on top of due dates and pace yourself weekly.
- All assignments, quizzes, and exams must be submitted by their posted deadlines. No late work will be accepted.

Access the course at:

southplainscollege.blackboard.com

Communication & Email Policy

- Good communication keeps everything running smoothly — never hesitate to reach out if you have questions or concerns!

How to Contact Me

- Email: laalexander@southplainscollege.edu
- Blackboard Messages: For short course-related questions

Response Time

- Emails received Monday–Thursday (8:00 AM – 3:30 PM) will receive a reply within 48 hours.
- Messages sent after 3:30 PM Thursday or over weekends/holidays will receive a response within 48 hours of the following Monday.

Email Etiquette & Online Conduct

- When emailing or posting online, always:
 - ✓ Use a respectful, professional tone
 - ✓ Include your full name and course section
 - ✓ Keep your message focused and polite
 - ✗ Avoid profanity, sarcasm, or personal remarks
- Creating a courteous and professional learning environment helps everyone succeed. Disrespectful or disruptive communication will result in disciplinary action per SPC policy.

Academic Integrity: Plagiarism & Cheating

- Honesty and integrity are the foundation of learning — especially in science. Every assignment, quiz, lab, and exam is designed to help you grow. Academic dishonesty not only affects your grade but undermines your understanding and credibility as a student.
- Consequences
 - Any form of cheating or plagiarism will result in:
 - A zero (0) for the assignment or exam, and
 - Possible failure of the course if the situation warrants.
 - If caught cheating on a major exam, the zero will stand and cannot be replaced by the Final Exam option.
- What Counts as Plagiarism
 - Plagiarism means presenting someone else's words, data, or ideas as your own. Examples include:
 - Turning in work purchased, borrowed, or downloaded from another source.
 - Copying or pasting text from books, articles, or websites without citation.
 - Using direct quotes (three or more words) without quotation marks and proper credit.
 - Missing in-text citations for ideas or data that aren't yours.

When in doubt — cite it! Ask before submitting if you're unsure.

- What Counts as Cheating

- Cheating includes, but isn't limited to:
 - Sharing or stealing exam content.
 - Using unauthorized materials (notes, phones, internet) during exams or quizzes.
 - Taking an exam for another student or allowing someone to take yours.
 - Copying another student's answers on any assignment.
 - Altering grades or resubmitting changed work.
 - Taking photos of tests, answers, or other students' work.

Academic integrity protects you and your classmates — build trust, not shortcuts.

Online Course Etiquette & Policies

- Respect & Responsibility
- Your participation should always reflect respect for yourself, your classmates, and the learning process.
- Keep discussion posts positive and professional.
- Respect differing opinions and learning paces.
- Maintain academic and digital professionalism in all interactions.
- Online Disclaimer
 - You may encounter materials or opinions on unofficial web pages, chat rooms, or forums. These are not sponsored by South Plains College or your instructor. SPC and your instructor disclaim liability for any data, opinions, or materials found outside official platforms.

Copyright Notice

- All instructional materials (PowerPoints, videos, handouts, etc.) are copyright protected and intended only for your personal educational use during this semester.
- You may print or download one copy for your use.
- Materials may not be altered, shared, or distributed in any form.

Login Security

- Do not share your Blackboard login or password with anyone.
If someone else accesses this course using your credentials, you will be dropped and given an F for the course.

Responsible Use of Artificial Intelligence (AI)

Artificial intelligence (AI) tools such as ChatGPT, Copilot, Gemini, and similar technologies can be valuable study and learning tools when used responsibly. I encourage you to explore AI as a way to strengthen your understanding of chemistry. For example, you may use AI to:

- Ask for additional explanations of difficult concepts.
- Generate practice problems or study questions.
- Quiz yourself before an exam.
- Ask for help identifying gaps in your understanding.
- Explore different ways of approaching or thinking about a chemistry concept.

- Create study guides, flashcards, or review activities for your personal study.

However, AI may not be used to complete any assignment that is submitted for a grade unless I specifically state otherwise. This includes homework, lab assignments and reports, discussion posts, written responses, reflections, calculations, and other graded work.

Written work is especially important. Anything submitted in your name should reflect your own thinking, understanding, and voice—not text generated or rewritten by AI. Do not use AI to write an assignment and then edit or reword the response to make it appear to be your own. The purpose of written assignments is for you to process the material, make connections, and demonstrate what *you* understand.

A good rule to remember is:

Use AI to help you learn—not to do your learning for you.

If you use AI while studying, you are still responsible for verifying the information it provides. AI can confidently provide incorrect information, calculations, explanations, or references. Always compare information with your course materials, textbook, notes, and other reliable sources. If you are unsure whether a particular use of AI is appropriate, ask me before using it. I would much rather help you find a responsible way to use AI as a learning tool than have AI interfere with your opportunity to develop the skills this course is designed to teach.

Instructional Policies & College Resources

- For information regarding official South Plains College statements — including policies on intellectual exchange, disabilities, non-discrimination, Title IX pregnancy accommodations, CARE Team, and campus concealed carry — please visit:
- [SPC Syllabus Statements](#)

Week	Chapters	Labs
Week 1	Introduction	Lab Safety Scientific Method
Week 2	Chapter 1: Introduction to Chemistry: Measurements, Atoms, Molecules, and More	Introduction of Graphing Measurement and Uncertainty
Week 3	Chapter 2: Atoms, Molecules, and Stoichiometry	Exploring Density
Week 4	Exam 1	
Week 5	Chapter 3: Mass Relationships and Stoichiometry	Exploring Chemical and Physical Changes
Week 6	Chapter 4: Solutions	States of Matter Balancing Equations
Week 7	Exam 2	
Week 8	Chapter 5: Acid/Base Chemistry	Single Replacement Reaction Stoichiometry and Percent Yield
Week 9	Chapter 6: Gas Laws	Determination of Acetic Acid Concentration
Week 10	Exam 3	
Week 11	Chapter 7: Energy	pH of Common Materials
Week 12	Chapter 8: Introduction to Organic Chemistry	Ionic and Covalent Bonding
Week 13	Exam 4	
Week 14	Chapter 9, Chapter 10, & Chapter 11: Biochemistry Overview	Naming Organic Compounds
Week 15	Exam 5	
Week 16	Comprehensive Final Exam	