South Plains College
Common Course Syllabus: CHEM 1411
Revised August 6, 2025

Department: Science

Discipline: Chemistry

Course Number: CHEM 1411

Course Title: General Chemistry I

Available Formats: conventional, fully online, hybrid, dual credit

Campus: Lubbock-Cooper High School

Course Description: Fundamental principles of chemistry for majors in the sciences, health sciences, and engineering; topics include measurements, fundamental properties of matter, states of matter, chemical reactions, chemical stoichiometry, periodicity of elemental properties, atomic structure, chemical bonding, molecular structure, solutions, properties of gases, and an introduction to thermodynamics and descriptive chemistry. 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. Semester Hours: 4 Lecture Hours: 3 Lab Hours: 3

Prerequisites: MATH 1314 or 1414 (College Algebra) or equivalent academic preparation

Credit: 4 **Lecture:** 3 **Lab:** 3

Instructor: Micaela Brown
mlbrown@lcisd.net

E-mail: I will respond to emails within 2 business days.

Textbooks: None. Files will be provided on blackboard or physical papers will be provided. Lab notebook is provided.

Supplies: none

This course partially satisfies a Core Curriculum Requirement:

Life and Physical Sciences Foundational Component Area (030)

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. Define the fundamental properties of matter.
2. Classify matter, compounds, and chemical reactions.
3. Determine the basic nuclear and electronic structure of atoms.
4. Identify trends in chemical and physical properties of the elements using the Periodic Table.
5. Describe the bonding in and the shape of simple molecules and ions.
6. Solve stoichiometric problems.
7. Write chemical formulas.
8. Write and balance equations.
9. Use the rules of nomenclature to name chemical compounds.
10. Define the types and characteristics of chemical reactions.
11. Use the gas laws and basics of the Kinetic Molecular Theory to solve gas problems.
12. Determine the role of energy in physical changes and chemical reactions.
13. Convert units of measure and demonstrate dimensional analysis skills.

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.

Course Evaluation:

60% Formative grades (homework, notes check, lab notebook, quizzes)
40% Summative grades (tests, projects)

Homework: Homework will be assigned occasionally. It can be completed if there is extra time in class, otherwise it is to be completed at home.
Lab Experiments: This course includes in-person experiments conducted during scheduled lab sessions. Attendance and active participation in these sessions are required. All students must follow established safety protocols at all times. Proper lab attire and adherence to instructor guidance are mandatory.

Failure to comply with safety rules may result in removal from the lab and a loss of credit for that activity.

Lab Grade: The provided lab notebook will be used during labs. It includes post lab questions and conclusions. It will be turned in after every lab session for a quiz grade.

Late Work: In the event that you are sick and are not able to make it to class, you will have 1 week from the time you are back on campus to get your work turned in. If I do not receive any of your work, it then becomes late. Late work will receive a maximum score of 70%. Students are expected to come into tutorials if they have missed class.

In the case that you are missing class for an extracurricular activity, doctor's appointment, or any other reason that you will have advanced notice for, you will need to come in BEFORE you leave to get the things that you will miss.

Extra Credit: There will be at least one extra credit opportunity a semester. Extra credit will not be accepted late.

Final Course Grade:

A: 90-100
B: 80-89
C: 70-79
D: 60-69

Attendance Policy: Students are expected to attend frequently in order to be successful in this course. Students are officially enrolled in all courses for which they pay tuition and fees at the time of registration. Students who enroll in a course but have "Never Attended" by the official census date, as reported by the faculty member, will be administratively dropped by the Office of Admissions and Records. If it is determined that a student is awarded financial aid for a class or classes in which the student never attended or participated, the financial aid award will be adjusted in accordance with the classes in which the student did attend/participate and the student will owe any balance resulting from the adjustment. This is in accordance with the policies set forth in the SPC General Catalog. This course information sheet contains the schedule of lectures and labs. If you are unable to finish this course, complete a withdrawal slip at the registrar's office.

Dropping a Course: Students may drop courses through Texan Connect, the Admissions and Records Office, or Advising and Testing Center through the late registration period.

After late registration has closed, a student must complete the online Student Initiated Drop Request to drop a course.

Students may also drop courses in person at any campus location by completing a Student Initiated Drop Form. Complete a Student Initiated Drop Form and return the signed form to the Levelland Admissions and Records Office, the Student Support Center at the Lubbock Downtown Center, the Lubbock Career and Technical Center, or Plainview Center. You must have a picture ID to complete the drop.

A mark of "W" will be given for student-initiated drops that occur prior to and through the last day to drop as indicated in the online Academic Calendar found here: https://www.southplainscollege.edu/academiccalendar/index.php.

Syllabus Statements: For information about Artificial Intelligence, Disabilities, Non-Discrimination, Intellectual Exchange, Title IX Pregnancy Accommodations, CARE (Campus Assessment, Response, and Evaluation) Team, Campus Concealed Carry, and COVID-19, please use this link: https://www.southplainscollege.edu/syllabusstatements/.

Plagiarism and Cheating: Students are expected to do their own work on all projects, quizzes, assignments, examinations, and papers. Failure to comply with this policy may result in an F for the assignment and can result in an F or X for the course, if circumstances warrant.

Plagiarism violations include, but are not limited to, the following:

1. Submitting work that has been purchased, borrowed, or downloaded from another student or an online term paper site.
2. Cutting and pasting together information from books, articles, other papers, or online sites without providing proper documentation;
3. Using direct quotations (three or more words) from a source without showing them to be direct quotations and citing them; or
4. Missing in-text citations.
5. Violating the Artificial Intelligence policy, as outlined in the syllabus. For more information on AI, please reference this in the syllabus statements: https://www.southplainscollege.edu/syllabusstatements/

Cheating violations include, but are not limited to, the following:

1. Obtaining an examination by stealing or collusion;
2. Discovering the content of an examination before it is given;
3. Using an unauthorized source of information (notes, textbook, text messaging, internet, apps) during an examination, quiz, or homework assignment;
4. Entering an office or building to obtain unfair advantage;
5. Taking an examination for another;
6. Altering grade records;
7. Copying another's work during an examination or on a homework assignment; 8. Rewriting another student's work in Peer Editing so that the writing is no longer the original student's;
9. Taking pictures of a test, test answers, or someone else's paper.

Student Code of Conduct Policy: Any successful learning experience requires mutual respect on the part of the student and the instructor. Neither instructor nor student should be subject to others' behavior that is rude, disruptive, intimidating, aggressive, or demeaning. Student conduct that disrupts the learning process or is deemed disrespectful or threatening shall not be tolerated and may lead to disciplinary action and/or removal from class.

Lab Safety: The chemistry laboratory is a potentially hazardous environment. Therefore, all students must follow all of the safety rules given to you in the safety presentation. The students must also follow any specific safety rules listed in the lab manual and any that the instructor may announce.

Safety Rules: These safety rules will be given to you in class. The safety rules must be followed. You will be required to sign a sheet indicating you have read and agree to follow the safety rules before being allowed to perform an experiment.

Logging into the Course: You are not allowed to give your user ID and/or password to anyone. You will be dropped and given an F for your final grade if someone besides you is caught logging into this course under your user ID and/or password.

Course Schedule: The following table contains the tentative course schedule. All material (including lecture material, experiment material, and material scheduled for the chapter exams) is subject to change. Also, all dates are subject to change. Changes will be announced if necessary.

Exam 1

Lab Safety
Chapter 1: Chemistry: The Study of Change
Learning Objective Met: Lecture #1,#2, #13
Chapter 2: Atoms, Molecules, and Ions
Learning Objective Met: Lecture #2, #3, #5, #7, #9
Experiment 0: Introduction to Lab Equipment
Learning Objectives Met: all Lab L o s
Experiment 1 : Measurements
Learning Objectives Met: Lecture #1, #13, all Lab L o s
Experiment 2: Density
Learning Objectives Met: Lecture #1, #13, all Lab L o s
Experiment 13: Determining Chemical Formulas and Names
Learning Objectives Met: Lecture #2, #7, #8, #9
Experiment 3: Atoms and Molecules
Learning Objectives Met: Lecture #3, #9, all Lab L o s

Exam 2

Chapter 3: Mass Relationships in Chemical Reactions
Learning Objective Met: Lecture #6, #7, #8, #10
Chapter 4: Reactions in Aqueous Solution
Learning Objective Met: Lecture #7, #8, #10, #12
Experiment 4: Determining the Mole Ratios in a Chemical Reaction
Learning Objectives Met: Lecture #7, #8, #12, all Lab L o s
Experiment 5: Hydrates
Learning Objectives Met: Lecture #2, #7, #12, all Lab L o s
Experiment 14: Precipitation Reactions
Learning Objectives Met: Lecture #7, #8, #9, #10
Experiment 6: Determine the Molar Mass by Titration
Learning Objectives Met: Lecture #6, #7, #8, all Lab L o s

Exam 3

Chapter 5: Gases
Learning Objective Met: Lecture #11

Chapter 6: Thermochemistry
Learning Objective Met: Lecture #10, #12
Experiment 7: Boyle's Law: Pressure -Volume Relationships in Gases
Learning Objectives Met: Lecture #11 , all Lab L o s
Experiment 8: Pressure -Temperature Relationship in Gases
Learning Objectives Met: Lecture #11, all Lab L o s
Experiment 9: Calorimetry of Metals
Learning Objectives Met: Lecture #12, all Lab Los
Experiment 10: Endothermic and Exothermic Reactions
Learning Objectives Met: Lecture #12, all Lab Los

Exam 4

Chapter 7: Quantum Theory and the Electronic Structure of Atoms
Learning Objective Met: Lecture #3, #5
Chapter 8: Periodic Relationships Among the Elements
Learning Objective Met: Lecture #4
Experiment 11B: Atomic Emission Spectroscopy
Learning Objectives Met: all Lab Los

Exam 5

Chapter 9: Chemical Bonding I: Basic Concepts
Learning Objective Met: Lecture #5
Chapter 10: Chemical Bonding II: Molecular Geometry and Hybridization of Atomic Orbitals
Learning Objective Met: Lecture #5
Experiment 16: Models (VSEPR)
Learning Objective Met: Lecture #3, all Lab Los

Final Exam Comprehensive

Week	Lecture Topic	Labs	Exam
	1 Intro, Chapter 1, lab safety	Experiment 0	
	2 Chapter 1	Experiment 1	
	3 Chapter 2	Experiment 2	
	4 Chapter 2	Experiment 3/13	EXAM 1
	5 Chapter 3	Experiment 4	
	6 Chapter 3	Experiment 5	
	7 Chapter 4	Experiment 6	
	8 Chapter 4	Experiment 14	EXAM 2
	9 Chapter 5	Experiment	

		7/8	
	0 Chapter 6	Experiment 9	
	1 Chapter 6	Experiment 10	EXAM 3
	2 Chapter 7		
	3 Chapter 8	Experiment 11E	
	4 Chapter 9		
	5 Chapter 10	Experiment 16	EXAM 5
16			FINAL EXAM