

South Plains College
Common Course Syllabus: CHEM 1411 (Spring 2020)

Department: Science

Discipline: Chemistry

Course Number: CHEM 1411

Course Section: 003

Course Title: General Chemistry I

Available Formats: Conventional

Campuses: Levelland

Instructor: Dr. Li Xiang Office: S107 Telephone: (806)716-2315
Email: lxiang@southplainscollege.edu

Office Hours: MW 12:15 pm - 12:45 pm; 2:15 pm – 3:15 pm
TTh 10:45 am - 11:45 pm
Friday 9:00 am - 12:00 pm

Course Description: CHEM1411: General Chemistry I. (4:3:3) 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.

Prerequisite: MATH 1314 (College Algebra) or equivalent academic preparation; high school chemistry is strongly recommended.

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

Textbook : Raymond Chang & Jason Overby, Chemistry 13th Edition (**Recommended**).

Supplies: Required

- LAB MANUAL: CHEM1411 Lab Manual.
- Safety glasses/goggles.
- Scientific calculator. Usage of cell phones *WILL NOT BE* allowed during exams!

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 skills**—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.

This course partially satisfies a Core Curriculum Requirement:

- Life and Physical Sciences Foundational Component Area (030)

Student Learning Outcomes Assessment:

A few topics/questions will be selected from the exams to assess the student learning outcomes at the end of semester.

Course Evaluation/Grading Policy:

Grading will be traditional: A = 90-100
B = 80-89
C = 70-79
D = 60-69
F = below 60

The grade distribution will be: 3 mid-term exams: 56%
12 lab experiments: 11%
2 lab exams: 13%
1 final exam: 20%

(The final exam will be a comprehensive test)

Lab experiments will count for 11% of the final grade. A completed lab will receive a grade of 100. A missed lab will receive a grade of zero. The labs must be completed on the days they are scheduled. There will be no make-ups for the labs. The lowest lab completion grade will be dropped at the end of the semester.

Missed Exams Policy:

There will be no make-ups for a missed exam unless a legitimate excuse for the date in question is provided (auto service center receipt, SPC nurse's form, doctor's note, etc). A make-up exam can be taken **no later than the end of the following class meeting**. If no legitimate excuse is given, a grade of zero will be given for that missed exam.

Academic Integrity:

Cheating (as defined in the SPC General Catalog) is not permitted. If you are caught cheating during an exam, you will be given a grade of **ZERO** for the exam and can result in an F for the course if circumstances warrant.

Attendance Policy:

Attendance is mandatory. More than **5** absences can lead to the dismissal from the class and will be given a final grade of **X**. **Class attendance will be used to earn extra credits for the exams.**

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.

Diversity Statement: In this class, the teacher will establish and support an environment that values and nurtures individual and group differences and encourages engagement and interaction. Understanding and respecting multiple experiences and perspectives will serve to challenge and stimulate all of us to learn about others, about the larger world and about ourselves. By promoting diversity and intellectual exchange, we will not only mirror society as it is, but also model society as it should and can be.

Disability Statement: Students with disabilities, including but not limited to physical, psychiatric, or learning disabilities, who wish to request accommodations in this class should notify the Disability Services Office early in the semester so that the appropriate arrangements may be made. In accordance with federal law, a student requesting accommodations must provide acceptable documentation of his/her disability to the Disability Services Office. For more information, call or visit the Disability Services Office at Levelland (Student Health & Wellness Office) 806-716-2577, Reese Center (Building 8) 806-716-4675, or Plainview Center (Main Office) 806-716-4302 or 806-296-9611.

Nondiscrimination Policy: South Plains College does not discriminate on the basis of race, color, national origin, sex, disability or age in its programs and activities. The following person has been designated to handle inquiries regarding the non-discrimination policies: Vice President for Student Affairs, South Plains College, 1401 College Avenue, Box 5, Levelland, TX 79336. Phone number 806-716-2360.

Title IX Pregnancy Accommodations Statement: If you are pregnant, or have given birth within six months, Under Title IX you have a right to reasonable accommodations to help continue your education. To activate accommodations you must submit a Title IX pregnancy accommodations request, along with specific medical documentation, to the Director of Health and Wellness. Once approved, notification will be sent to the student and instructors. It is the student's responsibility to work with the instructor to arrange accommodations. Contact the Director of Health and Wellness at 806-716-2362 or email cgilster@southplainscollege.edu for assistance.

Course Schedule: The following page contains the dates for the lectures, exams, lab experiments and lab exams. All dates are subject to change. Changes will be announced by the instructor. Some lab periods will be used for in-class practices.

FINAL EXAM: May 4, Monday 10:15 am - 12:15 pm

DATE	LECTURE	LAB
Jan 13	Introduction and Chpt 1	Safety Rules, Exp 1
Jan 15	Chpt 1	Exp 3
Jan 20	Martin Luther King Day Holiday	
Jan 22	Chpt 1	Exp 2
Jan 27	Chpt 1	In-class Practice 1
Jan 29	Chpt 2	Exp 4
Feb 3	Chpt 2	In-class Practice 2
Feb 5	Exam 1	No Lab
Feb 10	Chpt 2	Exp 6
Feb 12	Chpt 2	In-class Practice 3
Feb 17	Chpt 3	Exp 5
Feb 19	Chpt 3	In-class Practice 4
Feb 24	Chpt 3	Exp 8
Feb 26	Chpt 3	In-class Practice 5
Mar 2	Exam 2	No Lab
Mar 4	Chpt 4	Experiments in Solutions
Mar 9	Chpt 4	Lab Exam 1
Mar 11	Chpt 5	In-class Practice 6
Mar 16 – Mar 20	Spring Break	
Mar 23	Chpt 5	Exp 9
Mar 25	Chpt 6	In-class practice 7
Mar 30	Chpt 6	Exp 10
Apr 1	Chpt 6	In-class Practice 8
Apr 6	Exam 3	No Lab
Apr 8	Chpt 7	Exp 12 , In-class Practice 9
Apr 13	Easter Holiday	
Apr 15	Chpt 7	Exp 11
Apr 20	Chpt 7 & 8	In-class Practice 10
Apr 22	Chpt 9	Exp 13
Apr 27	Chpt 9	Lab Exam 2
Apr 29	Chpt 10	In-class Practice 11