

South Plains College
Common Course Syllabus: CHEM 1406
Revised Fall 2022

Department: Science

Discipline: Chemistry

Course Number: CHEM 1406-007

Course Title: Introductory Chemistry I

Available Format: Conventional

Campus: Levelland

Classroom: S119

Instructor Information:

Shawn Horn, M.S.

Office: S107

E-mail: sthorn@southplainscollege.edu

OFFICE HOURS:

M 1:00 – 2:00

T 10:00 – 11:00, 4:00 – 5:00

W 1:00 – 2:00

R 10:00 – 11:00, 4:00 – 5:00

F 1:00 – 3:00

Course Description: Survey course introducing chemistry. Topics may include inorganic, organic, biochemistry, food/physiological chemistry, and environmental/ consumer chemistry. Designed for non-science and allied health students. 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 Note: This course may not be substituted for CHEM 1411.

Prerequisite: None

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

Purchases:

- An Introduction to General, Organic, and Biological Chemistry by Timberlake, 13th Ed. **(Optional)**
- CHEM 1406 Lab Manual **(Required)**
- Safety Goggles/Glasses **(Required)**
- Scientific Calculator **(Required)**
- 4 Maroon Scantrons **(Required)**

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. 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.

Course Evaluation:

A = 89.50 – 100%

B = 79.50 – 89.49%

C = 69.50 – 79.49%

D = 59.50 – 69.49%

F = below 59.49%

Elements Test: 20 pts

Lecture Exam 1: 100 pts

Lecture Exam 2: 100 pts

Lecture Exam 3: 100 pts

Practice Worksheets: 5 pts ea (50 pts)

Pre-Lab Quizzes: 5 pts ea (55 pts)

Post-lab Questions: 5 pts ea (55 pts)

Lab Skills Test: 50 pts

Final Exam: 100 pts

Possible Bonus Points: 20 pts

Total Possible Points: 520 pts

One lowest lecture exam and lab will be dropped.

Attendance Policy: It is important that you attend all lectures and labs in order to do well in this course. Attendance will be taken in the form of grades for work completed in class. There will be no makeup exams or labs. You will receive a ZERO for any worksheets, labs, or exams missed. If you are unable to finish this course, complete a withdrawal slip at the registrar's office. Absences caused by official South Plains College activities or COVID will be excused.

Lecture Exams: There will be 3 lecture exams and a final exam; these exams will cover the materials discussed in the lectures, and the schedule of the lecture exams are on the course schedule along with lecture information. Lecture exams will generally be in a multiple-choice format, 25 questions in length, with the occasional free-response question. Only the materials discussed in the lectures will be on the exam. You will be given **1 hour and 15 minutes** to finish the exam. There will be a review packet for each exam. If the review is completed (by hand) and turned in at the exam time, **you can receive up to 5 bonus points** on your exam based on completion and effort (not accuracy).

All lecture exams will be **closed-note**. There will be some information given on the back page of each exam such as formulas, constants, conversions, charts, and tables. You will be informed ahead of time as to what will be given and what must be memorized.

- Lecture exam 1 (Chapters 2 and 4)
- Lecture exam 2 (Chapters 6 and 7)
- Lecture exam 3 (Chapters 3 and 8)
- Final exam (Chapters 9-16)

The materials scheduled for each lecture exam by subject to change, this change will be announced in advance if necessary.

Lab Experiments: Students are expected to read the lab manual for the given experiment each week before coming to class. A pre-lab quiz will be given at the beginning of lab (5 pts). Lab data and calculations will be collected for grading at the end of each lab period (5 pts each). There will be NO make-up labs allowed! If a student misses a lab, the student will receive a grade of ZERO for the lab missed. If a student isn't dressed appropriately for lab, doesn't have the appropriate eyewear, or is causing disruptions, they will be sent home and given a ZERO.

Final Exam: The final exam will be semi-comprehensive, covering chapters 9-16. The final exam will count 100 points and will be 40 multiple choice questions. Only the materials covered in the lectures will be on the exam, and you will have designated class time to finish the exam. There will be no make-up for final exams, missed final exam will result in a grade of ZERO. This exam is **open-note**.

Note: *At the end of the semester, the one midterm exam grade that is the LOWEST will be dropped. If you have two same exam grades and they are the lowest, ONLY one of them will be dropped at the end of the semester.*

Lab Safety: The chemistry laboratory is a potentially hazardous environment; therefore, all students must follow all of the safety rules passed out to you during the safety presentation. The students must also follow any specific safety rules listed in the lab manual and any ones that the instructor may announce during a lab period. A student not following the safety rules may be asked to leave the laboratory.

Safety Rules: These safety rules will be passed out in lab. The safety rules must be followed. Failure to do so can result in you being asked to leave the laboratory. You will be required to sign a sheet indicating you have read and agreed to follow the safety rules before being allowed to perform an experiment.

Academic Integrity: Cheating (as defined in the SPC General Catalog) will not be tolerated. If a student is caught cheating on an exam, a grade of ZERO will be given for that exam and that grade will NOT be dropped as lowest exam grade at the end of semester.

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](mailto:cgilster@southplainscollege.edu) for assistance.

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

Week #	Tuesday	Thursday
1 8/29	No Class	Intro/Syllabus Periodic Table
2 9/5	Lab Safety	Chp. 2 Elements Test
3 9/12	Exp. 1	Chp. 4
4 9/19	Exp. 2	Exam 1
5 9/26	Chp. 6 (Part 1)	Chp. 6 (Part 2)
6 10/3	Exp. 13	Chp. 7
7 10/10	Exp. 16	Exam 2
8 10/17	Exp. 4	Chp. 3
9 10/24	Exp. 5	Chp. 8
10 10/31	Exp. 10	Exam 3
11 11/7	Exp. 9	Chp. 9
12 11/14	Exp. 7	Chp. 10
13 11/21	Lab Skills Test	Thanksgiving No Class
14 11/28	Exp. 6	Chp. 11
15 12/5	Exp. 12	Chps. 12-16

FINAL EXAM SCHEDULE:

Date: Tuesday, December 13, 2022

Time: 1:00 – 3:00

Room: S119