South Plains College
Common Course Syllabus: CHEM 1411
Revised Fall 2024

Department: Science

Discipline: Chemistry

Course Number: CHEM 1411–002

Course Title: General Chemistry I

Available Formats: Conventional

Campus: Levelland

Classroom: S101

Instructor Information:
Shawn Horn, M.S.
Office: S107
E-mail: sthorn@southplainscollege.edu

OFFICE HOURS:

M	1:00 – 2:00
T	9:00 – 11:00
W	1:00 – 2:00
R	9:00 – 11:00
F	1:00 – 3:00

Course Description: (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. Semester Hours: 4 Lecture Hours: 3 Lab Hours: 3 Prerequisite: MATH 1314 (College Algebra) or equivalent academic preparation; high school chemistry is strongly recommended.

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

Purchases:

- Safety Goggles/Glasses (**Required)**
- Scientific Calculator (**Required)**
- General Chemistry, 2nd Ed., S. Horn **(Optional)**
    - Purchase instructions given in "What You Might Purchase" section on Blackboard

This course satisfies a core curriculum requirement: Yes – Life and Physical Science

Core Objectives Addressed:

- **Communication 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 skills -** to include the manipulation and analysis of 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/Competencies:

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:

A = 89.50 – 100%
B = 79.50 – 89.49%
C = 69.50 – 79.49%
D = 59.50 – 69.49%
F = below 59.49%

If you complete the semester with at least an 80% average on notes, homework, and experiments, I will be more favorable with your grade.

Elements Test: 20 pts
Polyatomics Test: 20 pts
Lecture Exam 1: 100 pts
Lecture Exam 2: 100 pts
Lecture Exam 3: 100 pts
Lecture Exam 4: 100 pts
Pre-lab Quizzes: 60 pts
Post-lab Questions: 60 pts
Chapter Notes: 11 pts
Video Notes: 11 pts
Homework: 50 pts
Final Exam: 100 pts
Possible Bonus Points: 25 pts
Total Possible Points: 717 pts
(*One lowest lab and homework dropped*)

Attendance Policy: It is important that you attend all lectures and labs 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 experiments. You will receive a ZERO for any experiments or exams missed. If you are unable to finish this course, complete a withdrawal slip at the registrar's office. **If you have 6 consecutive zeros or 10 total zeros, you may be dropped by the instructor with an X or F depending on your current standing.**

Lecture Exams: There will be 4 lecture exams; 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. Some information will be given on each exam such as constants, conversions, and charts. Only the materials discussed in the lectures and videos will be on the exam. You will be given **1 hour and 15 minutes** to finish the exam. There will be a review sheet for each exam. The exams will be **closed-note**, but on **Exams 2, 3, and 4** you can use a 3x5 notecard for any supplementary information. Lecture exams will have 2 sections: multiple choice and free-response. **There will be 6 bonus points available on each exam.**

Final Exam: The final exam is cumulative of the full semester. It will have a similar format to the lecture exams except there will be more questions and there will be **8 bonus points**. The final exam will carry the same weight as the lecture exams, but additionally it will serve as a lecture exam **grade replacer**. If your final exam score is higher than one of your lecture exams, it will count as the final exam score and replace that score. This can only be used to replace your one lowest exam score. You may also use an 8.5x11 sheet of paper on the final exam; however, **if you complete the Course Evaluation at end of the semester, you can take the final open-note.**

Lab Experiments: Students are expected to **read and print** 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 graded 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 is causing disruptions, they will be sent home and given a zero.

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 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.

For information regarding official South Plains College statements about intellectual exchange, disabilities, non-discrimination, Title IX Pregnancy Accommodations, CARE Team, and Campus Concealed Carry, please visit https://www.southplainscollege.edu/syllabusstatements/

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 #	Monday	Wednesday
1 8/26	Intro/Syllabus	Lab Safety
2 9/2	Labor Day No Class	Chp. 1 / **Elem. Test** Chp. 1 Lab
3 9/9	HW 1 Help Exp. 1	Chp. 2 / **Polys Test** Exp. 2
4 9/16	HW 2 Help Exp. 13	**Exam 1** No Lab
5 9/23	Exam 1 Return Exp. 5	Chp. 3 Chp. 3 Lab
6 9/30	HW 3 Help Exp. 4	Chp. 4 Chp. 4 Lab
7 10/7	HW 4 Help Exp. 6	**Exam 2** No Lab
8 10/14	Exam 2 Return Exp. 12	Chp. 5 Chp. 5 Lab
9 10/21	HW 5 Help Exp. 7	Chp. 6 Chp. 6 Lab
10 10/28	HW 6 Help Exp. 9	**Exam 3** No Lab
11 11/4	Exam 3 Return Exp. 10	Chp. 7 Chp. 7 Lab
12 11/11	HW 7 Help Exp. 11b	Chp. 8 Chp. 8 Lab
13 11/18	HW 8 Help No Lab	**Exam 4** No Lab
14 11/25	Exam 4 Return Chp. 9	Thanksgiving No Class
15 12/2	HW 9 Help Exp. 16	Chp. 10 Chp. 10 Lab / HW

Notes	Due Date
Chp 1	9/3
Chp 2	9/10
Chp 3	9/24
Chp 4	10/1
Chp 5	10/15
Chp 6	10/22
Chp 7	11/5
Chp 8	11/12
Chp 9	11/24
Chp 10	12/3

Homework	Due Date
HW 1	9/9
HW 2	9/16
HW 3	9/30
HW 4	10/7
HW 5	10/21
HW 6	10/28
HW 7	11/11
HW 8	11/18
HW 9	12/2
HW 10	12/9

FINAL EXAM SCHEDULE:
Monday, December 9, 2024
10:15 – 12:15
Room: S101