

South Plains College
Common Course Syllabus: CHEM 1411
Revised Fall 2020

Department: Science

Discipline: Chemistry

Course Number: CHEM 1411-004

Course Title: General Chemistry I

Available Formats: Flex

Campus: Levelland

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

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

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

Instructor Information:

Shawn Horn, M.S.

Office: S117-C

E-mail: sthorn@southplainscollege.edu

OFFICE HOURS:

M 11:00 – 12:00

T 1:00 – 2:00

W 11:00 – 12:00

R 1:00 – 2:00

F 11:00 – 3:00

Textbook: Chemistry, 13th Ed., R. Chang and J. Overby
CHEM 1411 Lab Manual: General Chemistry I, 2nd Edition, J. Yeh

Supplies: Scientific calculator (no communication or graphing abilities), computer, safety goggles, Proctorio (if you or the class go online)

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

Course Purpose: The purpose of the life and physical science component in the core curriculum is to enable the student to understand and apply relationships and theories of the natural sciences. Mastering general chemistry will enable the student to use the fundamentals to analyze, classify, and predict events based on chemical and physical properties.

Course Requirements:

1. The student should do each of the following:
 - a. Read the assigned chapters in the textbook and laboratory manual.
 - b. Attend all lectures and laboratory classes (except for COVID).
 - c. Participate in class discussions.
 - d. View audiovisual materials on selected topics.
 - e. Use the computer software in the lab and/ or classroom as it is assigned.
 - f. Complete the exams on the assigned dates; the exams may include free-response questions.

2. For laboratory the student should:
 - a. Read and comprehend each experiment assigned in the laboratory manual prior to attending lab.
 - b. Complete the pre-lab quiz before performing the lab.
 - c. Successfully complete each experiment.
 - d. Learn to use and/or analyze data from instruments or equipment needed to complete the experiments. (e.g. balance, pH meters, volumetric glassware)
 - e. Complete the laboratory reports, including post lab calculations and discussion questions.

Student Learning Outcomes/Competencies: Upon successful completion of this course, students will:

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.

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, 40 questions in length, with the occasional free-response question. Only the materials discussed in the lectures will be on the exam and you will have designated class time to finish the exam.

- Lecture exam 1 (Chapters 1 and 2)
- Lecture exam 2 (Chapters 3 and 4)
- Lecture exam 3 (Chapters 5 and 6)
- Final exam (Chapters 7-10)

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). If a student misses a lab, they will have one week to make it up by completing an online version of the lab. They must first take the pre-lab quiz on Blackboard using Proctorio, then watch video of the lab and record data, then complete the post-lab questions and email a screenshot of it.

FINAL EXAM: The final exam will be semi-comprehensive, covering chapters 7 – 10. The final exam will count 75 points and will be 75 questions (mostly multiple choice). 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.

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.*

SPC COVID POLICY: It is the policy of South Plains College for the Fall 2020 semester that as a condition of on-campus enrollment, all students are required to engage in safe behaviors to avoid the spread of COVID-19 in the SPC community. Such behaviors specifically include the requirement that all students properly wear CDC-compliant face coverings while in SPC buildings including in classrooms, labs, hallways, and restrooms. Failure to comply with this policy may result in dismissal from the current class session. If the student refuses to leave the classroom or lab after being dismissed, the student may be referred to the Dean of Students on the Levelland campus or the Dean/Director of external centers for Student Code of Conduct Violation.

ATTENDANCE: It is important that you attend all lectures and labs in order to do well in this course. Attendance will usually be taken during the lecture period, and lab attendance will be determined by the lab sheets submitted at the end of lab experiment. This class 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. Absences caused by official South Plains College activities will be excused.

The student maybe administratively withdrawn from the course when absences become excessive as defined in the course syllabus. When an unavoidable reason for class absence arises, such as illness, an official trip authorized by the college or an official activity, the instructor will permit the student to make up work missed. It is the student's responsibility to complete work missed within a reasonable period of time as determined by the instructor. Students are officially enrolled in all courses for which they pay tuition and fees at the time of registration. Should a student, for

any reason, delay in reporting to a class after official enrollment, absences will be attributed to the student from the first class meeting. 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. A student who does not meet the attendance requirements of a class as stated in the course syllabus and does not officially withdraw from that course by the official census date of the semester, may be administratively withdrawn from that course and receive a grade of “X” or “F” as determined by the instructor.

CLASSROOM CONDUCT: Students are expected to maintain a pleasant learning environment for themselves as well as for their classmates. Therefore, if, in the view of the instructor, a student is disrupting the class, the appropriate disciplinary action may be taken. Failure to comply with lawful direction of a classroom teacher relative to maintaining good order is considered misconduct on the part of the student. Repeated violations of disrupting a class may result in the student being dropped from the course.

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.

FINAL GRADING: Grading based on percentage:

A = 89.50 – 100%

B = 79.50 – 89.49%

C = 69.50 – 79.49%

D = 59.50 – 69.49%

F = below 59.49%

GRADE DISTRIBUTION:

Lecture Exam 1: 100 points

Lecture Exam 2: 100 points

Lecture Exam 3: 100 points

Pre-lab Quiz: 45 points

Post-lab Questions: 45 points

Final Exam: 75 points

Total Possible point: 365 points

(One lowest midterm will be dropped)

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) & Lubbock Center 806-716-4675, or Plainview Center (Main Office) 806-716-4302 or 806-296-9611.

NON-DISCRIMINATION STATEMENT: 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, 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 Crystal Gilster, Director of Health and Wellness at 806-716-2362 or email cgilster@southplainscollege.edu for assistance.

It is important for you to know that all staff members are mandated reporters of any incidents of sexual misconduct. That means that I cannot keep information about sexual misconduct confidential if you share that information with me. Dr. Lynne Cleavinger, the Director of Health & Wellness, can advise you confidentially as can any counselor in the Health & Wellness Center. They can also help you access other resources on campus and in the local community. You can reach Dr. Cleavinger at 716-2563 or lcleavinger@southplainscollege.edu or go by the Health and Wellness Center. You can schedule an appointment with a counselor by calling 716-2529

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.

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 #	Lecture	Lab
1 8/24	Intro/Syllabus	Intro/Syllabus
2 8/31	Chapter 1	Exp. 1
3 9/7	Chapter 2	Exp. 2
4 9/14	Exam 1	Exam 1
5 9/21	Chapter 3	Exp. 3
6 9/28	Chapter 4	Exp. 5
7 10/5	Exam 2	Exam 2
8 10/12	Chapter 5	Exp. 6
9 10/19	Chapter 6	Exp. 8
10 10/26	Exam 3	Exam 3
11 11/2	Chapter 7	Exp. 9
12 11/9	Chapter 8	Exp. 10
13 11/16	Chapter 9	Exp. 13
14 11/23	Chapter 10	No lab
15 11/30	Chapter 10	Final Exam Prep

FINAL EXAM SCHEDULE: