

**South Plains College
Common Course Syllabus: CHEM 1412
Revised Spring 2021**

Department: Science

Discipline: Chemistry

Course Number: CHEM 1412-004

Course Title: General Chemistry II

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: A grade of “C” or better in CHEM 1411

Instructor Information:

Shawn Horn, M.S.

Office: S118

E-mail: sthorn@southplainscollege.edu

OFFICE HOURS:

M 12:30 – 2:30

T 12:00 – 1:00

W 12:30 – 2:30

R 12:00 – 1:00

F 1:00 – 3:00

Textbook:

- Chemistry, 13th Ed., R. Chang and J. Overby (**Recommended**)
- CHEM 1412 Lab Manual: General Chemistry I, 2nd Edition, J. Yeh (**Required**)

Supplies: Scientific calculator (no communication or graphing abilities), computer, safety goggles (or glasses)

Course Description: Chemical equilibrium; phase diagrams and spectrometry; acid-base concepts; thermodynamics; kinetics; electrochemistry; nuclear chemistry; an introduction to organic chemistry and descriptive inorganic chemistry. Basic laboratory experiments supporting theoretical principles presented in lecture; introduction of the scientific method, experimental design, chemical instrumentation, data collection and analysis, and preparation of laboratory reports.

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 each week:
 - a. Check schedule on back of syllabus
 - b. Print the notes and watch the lecture videos
 - c. Read laboratory manual for the week's experiment
 - d. Attend all lectures and laboratory classes (except for COVID).
 - e. Participate in class worksheets.
 - f. Use the computer software in the lab and/ or classroom as it is assigned.
 - g. 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:

1. State the characteristics of liquids and solids, including phase diagrams and spectrometry.
2. Articulate the importance of intermolecular interactions and predict trends in physical properties.
3. Identify the characteristics of acids, bases, and salts, and solve problems based on their quantitative relationships.
4. Identify and balance oxidation-reduction equations and solve redox titration problems.
5. Determine the rate of a reaction and its dependence on concentration, time, and temperature.
6. Apply the principles of equilibrium to aqueous systems using Le Chatelier's Principle to predict the effects of concentration, pressure, and temperature changes on equilibrium mixtures.
7. Analyze and perform calculations with the thermodynamic functions, enthalpy, entropy, and free energy.
8. Discuss the construction and operation of galvanic and electrolytic electrochemical cells and determine standard and non-standard cell potentials.
9. Define nuclear decay processes.
10. Describe basic principles of organic chemistry and descriptive inorganic chemistry.

Upon successful completion of this lab course, students will:

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 and chemical instrumentation.
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, 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).

A **3x5 notecard** will be permitted for the exams. Both sides of the notecard may be used and can be handwritten or typed. Notecards can contain **formulas, conversions, and constants**, or any other information allowed by the instructor announced in class. Notecards **CANNOT** contain any worked examples from class notes, in-class worksheets, practice problems, or any other examples found online. A student should also not write any questions on the notecard. For each unauthorized example found on the notecard points will be **deducted** from the exam. The length of the exam and the amount of unpermitted information will determine the number of points deducted. Any bonus points for that exam will also be deducted from the exam total. Any unauthorized material on the notecard is classified as cheating therefore the cheating policies in the syllabus will also be followed.

You will be allowed to makeup ONE missed exam by appointment only. The makeup time is Friday from 1:00-2:15 pm in Room 112. If you show up late, you may still complete the exam, but you will forfeit that portion of your time. Makeup exams must be completed before the next exam. Missing an appointment will result in receiving a ZERO for the exam.

- Lecture exam 1 (Chapter 12)
- Lecture exam 2 (Chapters 13 and 14)
- Lecture exam 3 (Chapters 15 and 16)
- Final exam (Chapters 17-19, and 24)

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 complete an online version of the lab while filling out their lab manual and answers the lab questions. The lab is due upon first return, which is when the lab quiz will be taken. Failure to complete the lab during this time will result in a ZERO.

FINAL EXAM: The final exam will be semi-comprehensive, covering chapters 17–19 and 24. The final exam will count as 75 points and will be 40 questions (mostly multiple choice). Only the materials covered in the lectures will be on the exam and you will have 2 hours to finish the exam. There will be no make-up for final exams, missed final exam will result in a grade of ZERO.

SPC COVID POLICY: It is the policy of South Plains College for the Spring 2021 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.

If you have been exposed to someone or have contracted COVID yourself, it is your responsibility to contact DeEtte Edens (dedens@southplainscollege.edu). She is the SPC COVID contact person.

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. The 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.

If you miss **any 4 days or 3 consecutive days** of class, you will be dropped IMMEDIATELY. If you are currently passing, you'll be dropped with an X; if you're currently failing, you'll be dropped with an F. If you are absent due to COVID, these days will not count against you, but only if you have contacted DeEtte Edens and she has approved your absence.

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.

FINAL 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
Possible Bonus Points: 20 points
Total Possible Points: 355 points
(Lowest midterm and lab dropped)

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.

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

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 1/18	Intro/Syllabus (Not Meeting in Person)	Intro/Syllabus (Not Meeting in Person)
2 1/25	Chapter 12	Lab Worksheet 1 Pgs. 37-39
3 2/1	Exam 1 Review	Exam 1
4 2/8	Chapter 13	Exp. 1
5 2/15	Chapter 14	Exp. 2
6 2/22	Exam 2 Review	Exam 2
7 3/1	Chapter 15	Exp. 3
8 3/8	Chapter 16	Exp. 4
9 3/15	SPRING	BREAK
10 3/22	Chapter 16	Lab Worksheet 3 Pgs. 44-45
11 3/29	Exam 3 Review	Exam 3
12 4/5	Chapter 17	Exp. 5
13 4/12	Chapter 18	Exp. 6
14 4/19	Chapter 19	Exp. 7
15 4/26	Chapter 24	Exp. 8
16 5/3	Final Exam Review	Final Exam Review

HOME SCHEDULE: *The following table gives you a guide for what you should be doing at home **after** attending class that week and **before** you attend class the following week.*

Week #	Lecture	Lab
1 1/18	Watch Chapter 12 Videos	None
2 1/25	Complete Exam 1 Review	None
3 2/1	Watch Chapter 13 Videos	Read Exp. 1
4 2/8	Watch Chapter 14 Videos	Read Exp. 2
5 2/15	Complete Exam 2 Review	None
6 2/22	Watch Chapter 15 Videos	Read Exp. 3
7 3/1	Watch Chapter 16 Videos	Read Exp. 4
8 3/8	Re-Watch Chapter 16 Videos	None
9 3/15	SPRING	BREAK
10 3/22	Complete Exam 3 Review	None
11 3/29	Watch Chapter 17 Videos	Read Exp. 5
12 4/5	Watch Chapter 18 Videos	Read Exp. 6
13 4/12	Watch Chapter 19 Videos	Read Exp. 7
14 4/19	Watch Chapter 24 Videos	Read Exp. 8
15 4/26	Complete Final Exam Review	None
16 5/3	Complete Final Exam Review	None

FINAL EXAM SCHEDULE:

Wednesday, May 12, 2021: 9:00 am – 9:00 pm

Online: Blackboard

Open-note

2 hours to complete

Must be finished by 9:00 pm