

**South Plains College  
Common Course Syllabus: CHEM 1412  
Revised Spring 2020**

**Department:** Science

**Discipline:** Chemistry

**Course Number:** CHEM 1412-422

**Course Title:** General Chemistry II

**Available Formats:** Conventional

**Campuses:** Dual-Credit

**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.

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

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

**Textbook:** Nivaldo J. Tro, Principle of Chemistry: A Molecular Approach, 1<sup>st</sup> Edition.

**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

**Instructor:** Shawn Horn, M.S.

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**Office Hours:** MTWRF 12:43 – 1:10

**Student Learning Outcomes:**

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.

**Student Learning Outcomes Assessment:** Students will take a pre-test at the beginning of the semester that resembles their final exam. Scores on this test will be compared with exam scores throughout the semester as well as on the final.

**Course Evaluation:**

- A = 90 – 100%
- B = 80 – 89%
- C = 70 – 79%
- D = 60 – 69%
- F = below 60%

Lecture Exam 1: 100 points  
Lecture Exam 2: 100 points  
Lecture Exam 3: 100 points  
Lecture Exam 4: 100 points  
Lab Handouts: 55 points  
Lab Reports: 75 points  
Final Exam: 100 points  
Total Possible point: 530 points  
(One lowest exam grade will be dropped)

**Attendance Policy:** It is important that you attend all lectures and labs in order to do well in this course. Absences caused by official South Plains College and/or Wellman-Union HS activities will be excused. A student may be administratively withdrawn from the course if absences become excessive. When an unavoidable reason for class absence arises, such as illness, an official trip authorized by the college or an official activity, the instructor may permit the student to make up work missed (not including the lab). 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. Instructors are responsible for clearly stating their administrative drop policy in the course syllabus, and it is the student's responsibility to be aware of that policy. It is the student's responsibility to verify administrative drops for excessive absences through MySPC using his or her student online account. If it is determined that a student is awarded financial aid for a class or classes in which the student never attended or participated, the financial aid award will be adjusted in accordance with the classes in which the student did attend/participate and the student will owe any balance resulting from the adjustment.

**Plagiarism and Cheating:** Students are expected to do their own work on all projects, quizzes, assignments, examinations, and papers. Failure to comply with this policy will result in an F for the assignment and can result in an F for the course if circumstances warrant.

Plagiarism violations include, but are not limited to, the following:

1. Turning in a paper that has been purchased, borrowed, or downloaded from another student, an online term paper site, or a mail order term paper mill;
2. Cutting and pasting together information from books, articles, other papers, or online sites without providing proper documentation;
3. Using direct quotations (three or more words) from a source without showing them to be direct quotations and citing them; or
4. Missing in-text citations.

Cheating violations include, but are not limited to, the following:

1. Obtaining an examination by stealing or collusion;
2. Discovering the content of an examination before it is given;
3. Using an unauthorized source of information (notes, textbook, text messaging, internet, apps) during an examination, quiz, or homework assignment;

4. Entering an office or building to obtain unfair advantage;
5. Taking an examination for another;
6. Altering grade records;
7. Copying another's work during an examination or on a homework assignment;
8. Rewriting another student's work in Peer Editing so that the writing is no longer the original student's;
9. Taking pictures of a test, test answers, or someone else's paper.

**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.

**Lecture Exams:** There will be FOUR 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 be in a multiple-choice format, 40 questions in length. Only the materials discussed 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 exam allowed! If a student misses an exam, the student will receive a grade of ZERO for the exam missed.*

- Lecture exam 1 (Chapters 12 and 13)
- Lecture exam 2 (Chapters 14 and 15)
- Lecture exam 3 (Chapters 16 and 17)
- Lecture exam 4 (Chapters 18–20)
- Final exam (Chapters 12-20)

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

**Lab Experiments:** Lab data and calculations will be collected for grading at the end of each lab period (5 pts each). You will be assigned 5 labs to write a full-length report for including an introduction, methods, results, and conclusion section (15 pts each). These will be due at the start of lab the following week. Further instructions on lab report format will be given during lab. There will be no make-up labs for the missed lab; students will receive ZERO for the lab section if missed.

**Final Exam:** The final exam will be comprehensive and cover all chapters discussed during the semester. The final exam will count 100 points and will be 75 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.

**Note:** *At the end of the semester, the one exam grade that is the LOWEST will be dropped (Either one of the lecture exam or the final exam). 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.

**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.*

<b>Week #</b>	<b>M: Lecture 50 min</b>	<b>T: Lecture 50 min</b>	<b>W: Lab 100 min</b>	<b>R: Lecture 50 min</b>	<b>F: Lab 50 min</b>
1 1/13	Chapter 12	Chapter 12	<b>Pre-Test</b>	Chapter 12	HW Practice 12
2 1/20	No Class	Chapter 12	Exp. 1	Chapter 12	HW Practice 12
3 1/27	Chapter 13	Chapter 13	Exp.2	Chapter 13	HW Practice 13
4 2/3	Chapter 13	Chapter 13	Exp. 3	Chapter 14	HW Practice 13
5 2/10	Chapter 14	Chapter 14	<b>Exam 1 12-13</b>	Chapter 14	No Class
6 2/17	No Class	Chapter 14	Exp. 4	Chapter 15	HW Practice 14
7 2/24	Chapter 15	Chapter 15	Exp. 5	Chapter 15	HW Practice 15
8 3/2	Chapter 15	Chapter 16	<b>Exam 2 14-15</b>	Chapter 16	HW Practice 16
9 3/9	Chapter 16	Chapter 16	Exp. 6	Chapter 16	HW Practice 16
	<b>Spring Break</b>	<b>Spring Break</b>	<b>Spring Break</b>	<b>Spring Break</b>	<b>Spring Break</b>
10 3/23	Chapter 17	No Class	Exp. 7	Chapter 17	HW Practice 17
11 3/30	Chapter 17	Chapter 17	Exp. 8	Chapter 17	HW Practice 18
12 4/6	Chapter 18	Chapter 18	<b>Exam 3 16-17</b>	Chapter 18	No Class
13 4/13	Chapter 18	Chapter 19	Exp. 9	Chapter 19	HW Practice 19
14 4/20	Chapter 19	Chapter 20	Exp. 10	Chapter 20	HW Practice 20
15 4/27	Chapter 20	HW Practice Final	<b>Exam 4 18-20</b>	HW Practice Final	HW Practice Final
16 5/4	<b>F</b>	<b>I</b>	<b>N</b>	<b>A</b>	<b>L</b>

**FINAL EXAM SCHEDULE:**

May 6th, 2020

1:15 pm – 3:45 pm