

South Plains College
Common Course Syllabus: CHEM 1406 (Spring 2023)

Department: Science

Discipline: Chemistry

Course Number: CHEM 1406

Course Section: 007

Course Title: Introductory Chemistry I

Available Formats: Hybrid (Lectures on Blackboard, Labs Face to Face)

Campuses: Levelland

Instructor: Dr. Li Xiang Office: S117
Telephone: (806)716-2315
Email: lxiang@southplainscollege.edu

Please communicate with me by SPC emails. I will respond within 24 hours.

Office Hours: Monday: 12:15 pm – 12:30 pm; 3:45 pm - 4:45 pm
Tuesday: 12:15 pm – 2:15 pm
Wednesday: 12:15 pm – 12:30 pm; 3:45 pm – 4:45 pm
Thursday: 9:00 am – 11:00 am
Friday: 10:00 am – 11:30 am

Course Description: Survey course introducing chemistry. Topics in lectures may include inorganic, organic, biochemistry, food/physiological chemistry, and environmental/consumer chemistry. **It is designed for allied health students and for students who are not science majors.** Basic laboratory experiments supporting theoretical principles presented in lectures are performed to introduce to students the scientific method, experimental design, data collection and analysis, and preparation of laboratory reports. Note: **This course may not be substituted for CHEM 1411.**

Prerequisite: None

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

Textbook: Karen C. Timberlake, "Chemistry: An Introduction to General, Organic, and Biological Chemistry", 13th Edition (**optional, lecture notes will be posted on Blackboard**).

Supplies:

- **CHEM1406 and 1411 Lab Manual (optional, pdf of the lab manual will be posted on Blackboard).**
- Safety glasses/goggles (**provided**).
- Scientific calculator (**required**, usage of cell phones is not allowed during exams).

Minimum Computer Requirements:

- Personal computer
- High-speed internet connection
- Web browser: Google Chrome works best
- Microsoft Office (Word and PowerPoint)

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 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:

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.

This course partially satisfies a Core Curriculum Requirement:

- Life and Physical Sciences Foundational Component Area (030)

Student Learning Outcomes Assessment:

A few topics/questions will be selected from the exams to assess the student learning outcomes at the end of semester.

Course Evaluation/Grading Policy:

Grading will be traditional: A = 90-100
B = 80-89
C = 70-79
D = 60-69
F = below 60

The grade distribution will be: 3 midterm exams: 60%
13 lab experiments: 13%
2 lab quizzes: 13%
1 final exam: 14%

Lab attendance will count for 13% of the final grade. A completed lab will receive a grade of 100. A missed lab will receive a grade of zero. The labs must be completed on the days they are scheduled. There will be no make-ups for the labs. However, **2** grades of zero will be dropped and replaced by 100 at the end of the semester.

Exams: The 3 midterm exams will be conducted face to face. One page (8.5 x 11 in, front and back) of notes is permitted in the exams. The final exam will be conducted online. The final exam will **not** be a comprehensive test. It will only cover what we will study after the third midterm exam.

Missed Exams Policy:

There will be no make-ups for a missed exam unless a legitimate excuse for the date in question is provided. A make-up exam can be taken **no later than the end of the following class meeting**. If no legitimate excuse is given, a grade of zero will be given for that missed exam.

Academic Integrity:

Cheating (as defined in the SPC General Catalog) is not permitted. If you are caught cheating during an exam, you will be given a grade of **ZERO** for the exam and can result in an F for the course if circumstances warrant.

Attendance Policy:

It is vitally important that you plan your time to study the lecture notes on Blackboard and attend all the labs in order to do well in this course. Students who have never checked in on Blackboard and never attended labs by **February 1st** will be administratively dropped by the Office of Admissions and Records. More than **5** absences (labs and exams) over the semester can also lead to the dismissal from the class, and you will be given a final grade of **X**. **If a student is out due to COVID-19, appropriate arrangements will be made for the student to complete the assignments missed.**

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.

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.

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, Lubbock Centers (located at the Lubbock Downtown Center) 806-716-4675, or Plainview Center (Main Office) 806-716-4302 or 806-296-9611.

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 for assistance.

COVID-19 Statements:

- In compliance with GA-38, SPC will not require any person to wear a face covering. However, we support and encourage anyone who chooses to wear a face covering to maintain safety.
- In compliance with GA-38, SPC will not require any person to receive the COVID-19 vaccine to visit our campuses or attend class. However, we strongly recommend getting the vaccine to better protect yourself and others from the COVID-19 virus.

If you are experiencing any of the following symptoms, please do not attend class and either seek medical attention or test for COVID-19.

- Cough, shortness of breath, difficulty breathing
- Fever or chills
- Muscles or body aches
- Vomiting or diarrhea
- New loss of taste and smell

Please also notify DeEtte Edens, BSN, RN, Associate Director of Health & Wellness, at dedens@southplainscollege.edu or 806-716-2376. Proof of a positive test is required. A home test is sufficient but students must submit a photo of the positive result. The date of test must be written on the test result and an ID included in the photo. If tested elsewhere (clinic, pharmacy, etc.), please submit a copy of the doctor's note or email notification. Results may be emailed to DeEtte Edens, BSN, RN at dedens@southplainscollege.edu.

*A student is clear to return to class without further assessment from DeEtte Edens, BSN, RN if they have completed the 5-day isolation period, symptoms have improved, and they are without fever for 24 hours without the use of fever-reducing medication.

*Students must communicate with DeEtte Edens, BSN, RN prior to their return date if still symptomatic at the end of the 5-day isolation.

Course Schedule

The schedule contains the dates for the lectures, exams, lab experiments and lab quizzes. All dates are subject to change. Changes will be announced by the instructor.

*The chapters are based on the 13th edition of the Timberlake textbook.

*Some of the lab periods are used for worksheet practices to make sure that students understand the materials studied and to prepare students for the exams.

Week	LECTURE (Online, Blackboard)	LAB (Face to Face, Tuesdays)
Week 1 (Jan 16 – Jan 20)	Introduction and Chpt 2	Safety Rules (Online, Do Not Come)
Week 2 (Jan 23 – Jan 27)	Chpt 2	Exp 2 and Exp 1
Week 3 (Jan 30 – Feb 3)	3.1, Chpt 4	Practice 1
Week 4 (Feb 6 – Feb 10)	Chpt 4	Exp 3 and Practice 2
Week 5 (Feb 13 – Feb 17)	Chpt 6	Midterm Exam 1 (Feb 14)
Week 6 (Feb 20 – Feb 24)	Chpt 6	Exp 5 and Practice 3

Week 7 (Feb 27 – Mar 3)	3.2, Chpt 7	Exp 16 , Practice 4 and 5
Week 8 (Mar 6 – Mar 10)	Chpt 7	Exp 4 and Practice 6
Week 9 (Mar 13 – Mar 17)	Spring Break	
Week 10 (Mar 20 – Mar 24)	Lab Quiz 1 online	Midterm Exam 2 (Mar 21)
Week 11 (Mar 27 – Mar 31)	Chpt 3, 7.9, Chpt 8	Exp 10 and Exp 7
Week 12 (Apr 3 – Apr 7)	Chpt 9	Exp 6 and Practice 7
Week 13 (Apr 10 – Apr 14)	Chpt 10	Exp 12 and Practice 8 (Exp 12 counts as 2 labs)
Week 14 (Apr 17 – Apr 21)	Chpt 11	Midterm Exam 3 (Apr 18)
Week 15 (Apr 24 – Apr 28)	Chpt 12 and 14	Building Organic Models (counts as 2 labs)
Week 16 (May 1 – May 5)	Biochemistry Lab Quiz 2 online	Practice 9 and 10
Week 17 (May 8 – May 12)	Final Exam online	No Lab, Do Not Come