South Plains College
Common Course Syllabus: CHEM 1406 (Spring 2024)

Department: Science

Discipline: Chemistry

Course Number: CHEM 1406

Course Section: 002

Course Title: Introductory Chemistry I

Available Formats: Conventional (Lectures Face to Face, 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 - 4:00 pm
Tuesday:	12:15 pm - 3:15 pm
Wednesday:	12:15 pm - 12:30 pm; 3:45 pm – 4:00 pm
Thursday:	9:00 am - 11:00 am
Friday:	9:00 am - 11:00 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).

Recommended Computer Capability:

- 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 and the final exam 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 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 vital that you attend the lectures and labs in order to do well in this course. Students who have never attended by January 31st will be administratively dropped by the Office of Admissions and Records. More than **5** absences 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**.

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.

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 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.

Date	LECTURE (Face to Face)	LAB (Face to Face)
Jan 15	Martin Luther King Jr. Holiday	
Jan 17	Introduction and Chpt 2	Safety Rules
Jan 22	Chpt 2	**Exp 2**
Jan 24	Chpt 2	**Exp 1**
Jan 29	3.1, Chpt 4	In-class Practice 1
Jan 31	Chpt 4	**Exp 3**
Feb 5	Chpt 4	In-class Practice 2
Feb 7	**Midterm Exam 1**	No Lab
Feb 12	Chpt 6	**Exp 5**
Feb 14	Chpt 6	In-class Practice 3

Feb 19	Chpt 6	**Exp 16,** In-class Practice 4
Feb 21	3.2, Chpt 7	In-class Practice 5
Feb 26	Chpt 7	**Exp 4**
Feb 28	Chpt 7	In-class Practice 6
Mar 4	No Class	No Lab
Mar 6	**Midterm Exam 2**	No Lab
Mar 11 – Mar 15	**Spring Break**	
Mar 18	Chpt 3	**Lab Quiz 1 (open book)**
Mar 20	7.9	**Exp 10**
Mar 25	Chpt 8	**Exp 7**
Mar 27	Chpt 9	**Exp 6**
Apr 1	Chpt 9	In-class Practice 7
Apr 3	Chpt 10	**Exp 12**
Apr 8	Chpt 10	**Exp 12**, In-class Practice 8
Apr 10	No Class	No Lab
Apr 15	**Midterm Exam 3**	No Lab
Apr 17	Chpt 11	**Organic Models**
Apr 22	Chpt 12 and 14	**Organic Models**
Apr 24	11.8	**Lab Quiz 2 (open book)**
Apr 29	Biochemistry	In-class Practice 9
May 1	Biochemistry	In-class Practice 10

Final Exam: May 6; time to be determined.