South Plains College
Common Course Syllabus: CHEM 1406
Revised 08/20/2025

Department: Science

Discipline: Chemistry

Course Number: CHEM 1406

Course section: 452

Course Title: Introductory Chemistry 1

Available Formats: Dual Credit (Lecture: online and Lab: in person)

Instructor: Dr. Bangshing Wang. Office S117B. **Email:** bwang@southplainscollege.edu

Office Hours:	Monday:	9:30 am ~ 11:00 am & 2:15 pm ~ 3:00 pm
	Tuesday:	8:30 am ~ 9:30 am
	Wednesday:	9:30 am ~ 11:00 am & 2:15 pm ~ 3:00 pm
	Thursday:	8:30 am ~ 9:30 am
	Friday:	9:30 am ~ 11:00 am

Course Description: CHEM1406: INTRODUCTORY CHEMISTRY 1. (4:3:3) Survey course introducing chemistry. Topics may include inorganic, organic, biochemistry, food/physiological chemistry, and environmental/consumer chemistry. Designed for allied health students and for students who are not science majors. 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. Note: This course may not be substituted for CHEM 1411.

Prerequisite: None

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

Textbook: N/A

Supplies:

- Computer with internet access.
- Scientific calculator. Usage of cell phones *WILL NOT BE* allowed on exam!

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

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.

Student Learning Outcomes Assessment:
Few topics/questions from the exams will be selected to assess the students learning outcomes at the end of semester.

Course Evaluation/Grading Policy:
CHAPTER EXAMS: There will be *TEN*-chapter exams, and they will be taken on *Blackboard*; ***Exams will open from Monday 7:00 AM to Friday 4:00 PM on the week exams are assigned.*** ***Note: Final exam (Chapter 10 exam) is due Wednesday of the week.*** The teacher in charge at your high school will schedule the exam date, students have the above time window to complete the exam during the schedule date. It is a 1-hour timed exam, once a student starts, they must complete the exam. These exams will cover the materials in the lecture notes, and the schedule of the exams are on the course schedule. Exams will be in a multiple-choice format and worth 50 points. Only the materials discussed in the lecture notes will be on the exam, and you will have time to finish it. There will be no make-up for lecture exams.

- Chapter 1 exam: 50 points
- Chapter 2 exam: 50 points
- Chapter 3 exam: 50 points
- Chapter 4 exam: 50 points
- Chapter 5 exam: 50 points
- Chapter 6 exam: 50 points
- Chapter 7 exam: 50 points
- Chapter 8 exam: 50 points
- Chapter 9 exam: 50 points
- Chapter 10 exam: 50 points

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

EXAM REVIEW: There will be *TEN* exam reviews, sole purpose of the exam practice review is to help prepare for the exam and it does not count towards the total grade. Highly recommend students spend quality time with the exam review as it will prepare you for the exam. You can find exam reviews on Blackboard.

HOMEWORK: There will be EIGHT-chapter homework, and they will be taken on Blackboard; ***Homework will be open from Monday 7:00 AM to Thursday 10:00 PM on the week the homework is assigned***. Students have the above time window to complete the homework, it is a 1-hour timed, once a student starts, they must complete the homework. This homework will cover the materials in the lecture notes, and the schedule of the homework are on the course schedule. Homework will be in a multiple-

choice format and worth 10 points. Only the materials discussed in the lecture notes will be on the exam, and you will have time to finish it. There will be no make-up for lecture exams.

- Chapter 1 homework: 10 points
- Chapter 2 homework: 10 points
- Chapter 3 homework: 10 points
- Chapter 4 homework: 10 points
- Chapter 5 homework: 10 points
- Chapter 6 homework: 10 points
- Chapter 7 homework: 10 points
- Chapter 8 homework: 10 points

LAB EXPERIMENTS: Lab experimental reports will be collected by the teacher when students are finished. Students will complete the lab assignments for each lab assignment will be worth 10 points. There will be a total of 12 labs, which adds up to 120 points for the lab experiments.

- Experiment 1: Measurement 10 points
- Experiment 2: Density 10 points
- Experiment 3: Subatomic particles 10 points
- Experiment 4: Determining mole ratio 10 points
- Experiment 5: Hydrates 10 points
- Experiment 6: Determining unknown acid 10 points
- Experiment 7: Boyles' law 10 points
- Experiment 10: Exothermic and Endothermic rxn 10 points
- Experiment 11: Atomic emission spectroscopy 10 points
- Experiment 12: Household acids and bases 10 points
- Experiment 13: Naming compounds 10 points
- Experiment 17: Stoichiometry problem worksheet 10 points

COURSE GRADING:

Grading based on percentage:
A = 90 – 100%
B = 80 – 89%
C = 70 – 79%
D = 60 – 69%
F = below 60%

The grade distribution:

Total Chapter Exams:	500 points
Total Home Labs:	120 points
Total Chapter Homework:	80 points
Total Point:	**700 points**

Attendance Policy:
It is vitally important that you plan your time and study lectures notes and attend all the laboratory experiments to do well in this course. ***To be considered being actively attending the course, student must log into Blackboard regularly and complete the lab***

assignments before the census date. If the student does not log into course Blackboard and did not turn in assignment before the census date, the student will be listed as "Never Attended" and drop from the course. 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.

Students are expected to attend all classes in order to be successful in a course. The student may be 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 may 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.

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 a grade of ZERO 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.

Email: When you have questions, problems, or comments, you can e-mail me directly to *bwang@southplainscollege.edu*. Please refrain from using the BlackBoard Course Messages tool to message me. I will respond to your email in a timely manner (within 24 hours), emails received after 10:00 PM on Monday through Thursday will receive a response next morning. Emails received on Friday through Sunday will get a response usually same day email received, unless email was sent after 10:00 PM. I generally will not check my email often during the weekend, but I will reply to your email in a timely manner when I see them.

Expectations when Corresponding: Please be polite, courteous, and respectful when communicating. Do not use profanity under any circumstances. Do not write disrespectful, insulting, mean, rude, profane, insensitive, or other hurtful messages or comments under any circumstances. Failure to abide by this policy will result in the appropriate disciplinary actions.

Online Disclaimer: This is to notify you that materials you may be accessing in chat rooms, e-mails, discussion forums or unofficial web pages are not officially sponsored by the instructor or South Plains College. The United States Constitution rights of free speech apply to all members of our community regardless of the medium used. The instructor and South Plains College disclaim all liability for data, information or opinions expressed in these forums.

Minimum Computer Requirements:

1. Personal computer
2. Web Browser: Google Chrome works best
3. A high-speed internet connection
4. Microsoft Word and Microsoft PowerPoint software (a recent version)
5. Software or Program to read PDFs
6. A good soundcard and functioning speakers

7. Knowledge of how to navigate web pages and how to deal with pop-up blockers and other devices and warnings on your browser
8. Knowledge of how to download files from the internet and find them on your computer once they are downloaded
9. Knowledge of basic operations of Microsoft Word and Microsoft PowerPoint
10. Knowledge of how to view and adjust videos
11. May need a printer

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Computer Problems or Blackboard Server Problems: If a student's internet connection goes down, or a student's computer crashes or otherwise becomes inoperable for Blackboard, it is the responsibility of the student to have their internet connection and/or computer repaired as soon as possible in order to avoid getting behind in the class. While the computer and/or internet connection is being repaired, the student should seek an alternate computer. This could be a friend's computer, a relative's computer, a computer at a library, or a computer at the computer lab on the Levelland or Reese campuses. It will be the student's responsibility to find an alternate computer to avoid getting behind in the class. Internet problems and/or the crash or inoperability of a computer will not be an acceptable excuse for being late with any assignments or getting behind with the chapter modules*. It is the responsibility of the student to have a backup plan in place.* If the Blackboard server goes down, the appropriate time extensions on any quizzes will be determined and announced by the instructor.

Logging into the Course: You are not allowed to give your user ID and/or password to anyone. You will be dropped and given an F for your final grade if someone besides you is caught logging into this course under your user ID and/or password.

For information regarding official South Plains College statements about Intellectual Exchange, Disabilities, Non-discrimination, Title IX Pregnancy Accommodations, CARE Team, and Campus Concealed Carry, COVID-19, Artificial Intelligence, please visit https://www.southplainscollege.edu/syllabusstatements/.

	Lab Experiments ***Open, Monday 7:00am*** ***Close, Friday 4:00pm***	**Homework** ***Open, Monday 7:00am*** ***Close, Thursday 10:00pm***	**Exam** ***Open, Monday 7:00am*** ***Close, Friday 4:00pm***
Week #1	-SPC Chemical Hygiene Plan -Sign chemical hygiene plan agreement form.		
Week #2	Experiment 1: Measurements ***Due Friday, 09/05 at 4 pm***	Chapter 1 Homework ***Due Thursday, 09/04 at 10 pm***	Chapter 1 Exam ***Due Friday, 09/05 at 4 pm***
Week #3	Experiment 2: Density ***Due Friday, 09/12 at 4 pm***		
Week #4	Experiment 3: Elements and Compounds ***Due Friday, 09/19 at 4 pm***	Chapter 2 Homework ***Due Thursday, 09/18 at 10 pm***	Chapter 2 Exam ***Due Friday, 09/19 at 4 pm***
Week #5	Experiment 4: Determining mole ratio ***Due Friday, 09/26 at 4 pm***		
Week #6	Experiment 11A: Atomic emission spectroscopy ***Due Friday, 10/03 at 4 pm***	Chapter 3 Homework ***Due Thursday, 10/02 at 10 pm***	Chapter 3 Exam ***Due Friday, 10/03 at 4 pm***
Week #7	Experiment 13: Naming Compounds ***Due Friday, 10/10 at 4 pm***		
Week #8	Experiment 5: Hydrates ***Due Friday, 10/17 at 4 pm***	Chapter 4 Homework ***Due Thursday, 10/16 at 10 pm***	Chapter 4 Exam ***Due Friday, 10/17 at 4 pm***
Week #9	Experiment 17: Stoichiometry worksheet problems ***Due Friday, 10/24at 4 pm***	Chapter 5 Homework ***Due Thursday, 10/23 at 10 pm***	Chapter 5 Exam ***Due Friday, 10/24 at 4 pm***
Week #10	Experiment 6: Determining unknown acid by titration ***Due Friday, 10/31 at 4 pm***		
Week #11	Experiment 7: Boyles' law ***Due Friday, 11/07 at 4 pm***	Chapter 6 Homework ***Due Thursday, 11/06 at 10 pm***	Chapter 6 Exam ***Due Friday, 11/07 at 4 pm***
Week #12	Experiment 10: Exothermic and endothermic rxn ***Due Friday, 11/14 at 4 pm***	Chapter 7 Homework ***Due Thursday, 11/13 at 10 pm***	Chapter 7 Exam ***Due Friday, 11/14 at 4 pm***
Week #13	Experiment 12: Household acids and bases, and titrations. ***Due Friday, 11/21 at 4 pm***	Chapter 8 Homework ***Due Thursday, 11/20 at 10 pm***	Chapter 8 Exam ***Due Friday, 11/21 at 4 pm***
Week #14	*Thanksgiving Holidays*		
Week #15			Chapter 9 Exam ***Due Friday, 12/05 at 4 pm***
Week #16			Chapter 10 Exam ***Due Wednesday, 12/10 at 4 pm***

Note: Final exam time maybe different from normal lecture exam time.