

South Plains College
Common Course Syllabus: CHEM 1406
Revised 01/08/2024

Department: Science

Discipline: Chemistry

Course Number: CHEM 1406

Course section: 152

Course Title: Introductory Chemistry I

Available Formats: Online (Lecture and Lab)

Campuses: Online

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

Office Hours: Monday ~ Thursday: 8:15 am ~ 9:30 am
Friday: 8:30 am ~ 11:30 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: Required

- Home Lab Kit from Carolina Distance Learning (Purchase information below)
- Personal computer with internet access.
- Any device to take pictures of labs and worksheets.
- Scientific calculator.

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:

A 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 Friday 10 AM (week prior to deadline) to Wednesdays morning 10 AM on the week the exam is due.** Students have the above time window to complete the exam, it is 20 problems, 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, 11 and 12 exam: 50 points

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

QUIZZES: There will be *EIGHT*-chapter quizzes and they will be taken on *Blackboard*; **Quizzes will be open from Friday 10 AM to Tuesdays morning 10 AM on the week quiz is due.** Students have the above time window to complete the quiz, it is a 1-hour timed quiz, once a student starts, they must complete the quiz. These quizzes will cover the materials in the lecture notes, and the schedule of the quizzes are on the course schedule. Quizzes 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 quiz: 10 points
- Chapter 2 quiz: 10 points

- Chapter 3 quiz: 10 points
- Chapter 4 quiz: 10 points
- Chapter 5 quiz: 10 points
- Chapter 6 quiz: 10 points
- Chapter 7 quiz: 10 points
- Chapter 8 quiz: 10 points

HOME LAB EXPERIMENTS: Students are required to purchase a Home Lab experiments experiment kit from Carolina Distance Learning. These will be submitted for grading before its due date. Students will complete the lab experiments and email them to the instructor before the due date to receive credits. **All the home lab experiments are due Mondays at 10 AM** (Please look at course schedule at the end of syllabus for specific due dates). **Submit the labs by taking pictures; picture of your lab set up, data table and data analysis. Email them to bwang@southplainscollege.edu to receive full credit** (Please submit each lab per email, you can submit any time before Monday's deadline).

- Home lab experiment 1: 10 points
- Home lab experiment 2: 10 points
- Home lab experiment 3: 10 points
- Home lab experiment 4: 10 points
- Home lab experiment 5: 10 points
- Home lab experiment 6: 10 points
- Home lab experiment 7: 10 points
- Home lab experiment 8: 10 points
- Home lab experiment 9: 10 points
- Home lab experiment 10: 10 points

Carolina Distance Learning Home Lab Kit Purchase Information:

There are two ways to purchase the home lab kit.

1. You can purchase the lab kit directly from the Carolina website with your credit card for 187.00 + ~20.00 shipping, you can use the link (<https://www.carolina.com/catalog/detail.jsp?prodId=583009&orgid=1904740&cid=1>) to purchase the kit directly from the website.
2. You can purchase a voucher for the lab kit from SPC Levelland bookstore using scholarship or financial aid for ~288.75 with shipping.

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: 100 points
- Total Chapter Quizzes: 80 points
- Total Point: 680 points**

Attendance Policy:

It is vitally important that you plan your time, study lecture notes, and complete all the lab assignments to do well in this course.

Students must attend all classes 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.

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 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.

COVID-19

If you are experiencing any of the following symptoms, please do not attend class and either seek medical attention or get tested 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

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, please visit

<https://www.southplainscollege.edu/syllabusstatements/>.

	Lab Experiments <i>Due Monday by 10 AM</i> <i>Submitting by email with pictures attached.</i>	Quiz <i>Open, Friday 10:00am</i> <i>Close, Tuesday 10:00am</i>	Exam <i>Open, Friday 10:00am</i> <i>Close, Wednesday 10:00am</i>	Lecture learning plan
Week #1	-Read over lab safety manual.			- Learn chapter 1 lecture notes - Work on Exam 1 review before exam.
Week #2	-Sign "Distance learning laboratory safety agreement" <i>Due Monday, 01/22 at 10 am</i>	Chapter 1 Quiz <i>Due Tuesday, 01/23 at 10 am</i>	Chapter 1 Exam <i>Due Wednesday, 01/24 at 10 am</i>	- After exam, learn chapter 2 lecture notes -Work on Exam 2 review before exam.
Week #3	-HL 1: Scientific methods <i>Due Monday, 01/29 at 10 am</i>	Chapter 2 Quiz <i>Due Tuesday, 01/30 at 10 am</i>	Chapter 2 Exam <i>Due Wednesday, 01/31 at 10 am</i>	-After exam, learn chapter 3 lecture notes
Week #4	-HL 2: Exploring density <i>Due Monday, 02/05 at 10 am</i>			- Continue learning chapter 3 lecture notes. -Work on Exam 3 review before exam.
Week #5	-HL 3: Chemical and physical properties <i>Due Monday, 02/12 at 10 am</i>	Chapter 3 Quiz <i>Due Tuesday, 02/13 at 10 am</i>	Chapter 3 Exam <i>Due Wednesday, 02/14 at 10 am</i>	-After exam, learn chapter 4 lecture notes
Week #6	-HL 4: Bonding molecular geometry <i>Due Monday, 02/19 at 10 am</i>			- Continue learning chapter 4 lecture notes -Work on Exam 4 review before exam.
Week #7	-HL 5: Investigating chemical reactions <i>Due Monday, 02/26 at 10 am</i>	Chapter 4 Quiz <i>Due Tuesday, 02/27 at 10 am</i>	Chapter 4 Exam <i>Due Wednesday, 02/28 at 10 am</i>	- After exam, learn chapter 5 lecture notes
Week #8	-HL 6: Replacement reaction stoichiometry <i>Due Monday, 03/04 at 10 am</i>			- Continue learning chapter 5 lecture notes -Work on Exam 5 review before exam.
<i>Spring Break</i>				
Week #9	-HL 7: Chemistry the fundamentals of calorimetry <i>Due Monday, 03/18 at 10 am</i>	Chapter 5 Quiz <i>Due Tuesday, 03/19 at 10 am</i>	Chapter 5 Exam <i>Due Wednesday, 03/20 at 10 am</i>	- After exam, learn chapter 6 lecture notes -Work on Exam 6 review before exam.
Week #10		Chapter 6 Quiz <i>Due Tuesday, 03/26 at 10 am</i>	Chapter 6 Exam <i>Due Wednesday, 03/27 at 10 am</i>	- After exam, learn chapter 7 lecture notes
Week #11	-HL 8: Ideal gas law constant <i>Due Monday, 04/01 at 10 am</i>			- Continue learning chapter 7 lecture notes -Work on Exam 7 review before exam.
Week #12	-HL 9: Determination of acetic acid concentration <i>Due Monday, 04/08 at 10 am</i>	Chapter 7 Quiz <i>Due Tuesday, 04/09 at 10 am</i>	Chapter 7 Exam <i>Due Wednesday, 04/10 at 10 am</i>	- After exam, learn chapter 8 lecture notes

Week #13	-HL 10: Molar mass by freezing point depression <i>Due Monday, 04/15 at 10 am</i>			- Continue learning chapter 8 lecture notes -Work on Exam 8 review before exam.
Week #14		Chapter 8 Quiz <i>Due Tuesday, 04/23 at 10 am</i>	Chapter 8 Exam <i>Due Wednesday, 04/24 at 10 am</i>	- After exam, learn chapter 9 lecture notes -Work on Exam 9 review before exam.
Week #15			Chapter 9 Exam <i>Due Wednesday, 05/01 at 10 am</i>	- After exam, learn chapter 10 lecture notes
Week #16			Chapter 10, 11 and 12 <i>Due Wednesday, 05/08 At 10 am</i>	

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