

Course Syllabus

CHEM 1411
General Chemistry I (4005015403)

Course Description: Fundamental principles of chemistry for majors in the sciences, health sciences, and engineering; topics include measurements, fundamental properties of matter, states of matter, chemical reactions, chemical stoichiometry, periodicity of elemental properties, atomic structure, chemical bonding, molecular structure, solutions, properties of gases, and an introduction to thermodynamics and descriptive chemistry.

Basic laboratory experiments supporting theoretical principles presented; introduction of the scientific method, experimental design, data collection and analysis, and preparation of laboratory reports.

Semester Hours Credit: 4

Lecture/Lab Hours: 3-3

Prerequisite: MATH 1314, College Algebra or equivalent academic preparation.
High school chemistry is strongly recommended.

To enroll in any science course, students must demonstrate readiness to perform college level academic coursework in reading and writing according to Coastal Bend College academic skills assessment guidelines. Basic computer skills are also required.

Textbook(s): *General Chemistry – The Essential Concepts (7th edition)* ISBN: 9780073402758

Student Learning Outcomes:

Upon successful completion of this course, students will:

1. Define the fundamental properties of matter.
2. Classify matter, compounds, and chemical reactions.
3. Determine the basic nuclear and electronic structure of atoms.

4. Identify trends in chemical and physical properties of the elements using the Periodic Table.
5. Describe the bonding in and the shape of simple molecules and ions.
6. Solve stoichiometric problems.
7. Write chemical formulas.
8. Write and balance equations.
9. Use the rules of nomenclature to name chemical compounds.
10. Define the types and characteristics of chemical reactions.
11. Use the gas law and basics of the Kinetic Molecular Theory to solve gas problems.
12. Determine the role of energy in physical changes and chemical reactions.
13. Convert units of measure and demonstrate dimensional analysis skills.
14. Use basic apparatus and apply experimental methodologies used in the chemistry laboratory.
15. Demonstrate safe and proper handling of laboratory equipment and materials
16. Conduct basic laboratory experiments with proper laboratory techniques.
17. Make careful and accurate experimental observations.
18. Relate physical observations and measurements to theoretical principles.
19. Interpret laboratory results and experimental data, and reach logical conclusions.
20. Record experimental work completely and accurately in laboratory notebooks and communicate experimental results clearly in written reports.
21. Design fundamental experiments involving principles of chemistry.
22. Identify appropriate sources of information for conducting laboratory experiments involving principles of chemistry.

Evaluation Methods:

During the semester, points will be assigned for each exam, quiz, homework assignment, etc. All regular exams will be worth 100 points but the final exam will be worth 150 points. Homework, quizzes and other assignments may be given during the semester and will be averaged along with the exam grades to determine the number of total points. Students who score, on average, 95% or higher in the lecture portion of the course without dropping an exam will be exempted from taking the final exam.

Five (5) major exams will be given in the lecture portion of this course; of these exams, students may drop one (1) exam if no exams are missed. The student may not drop the final exam unless student is exempt. The final exam will be up to 100% comprehensive, depending on the amount of untested material remaining before the final exam. A small portion of any exam (up to 10%) may be material not specifically covered in lecture but which is well presented in the text and listed on the review sheet. Students are responsible for reading text chapters and becoming familiar with the concepts listed on the review sheets.

The final grade will be determined by the number of points the student has earned, divided by the total points possible and multiplied by 100, as a percent. Lab policies and grades are explained in a separate handout. Lecture will count 75% and lab 25% of the total grade.

ADA Statement: No qualified individual with a disability shall, by reason of such disability, be excluded from participation in or be denied the benefits of the services, programs, or activities of the College District, or be subjected to discrimination by the College District. Nor shall the College District exclude or otherwise deny equal services, programs, or activities to an individual because of the known disability of an individual with whom the individual is known to have a relationship or association. 42 U.S.C. 12132; 28 CFR 35.130(g).

See at: [GL \(Legal\)](#)

Special Needs Services: Students with special needs, including physical and learning disabilities, who wish to request accommodations in this course should contact the Student Development Office as soon as possible to make arrangements; this should occur no later than the second week of class or as soon as the student has the documentation on the disability and requested accommodation per a certified medical or psychological professional. In accordance with federal law, a student requesting accommodations must provide documentation of disability to the Student Development Advisor.

For more information, contact: in Alice at sdalice@coastalbend.edu; Beeville at sdbeeville@coastalbend.edu; Kingsville at sdkingsville@coastalbend.edu; and Pleasanton at sdpleasanton@coastalbend.edu.

Academic Dishonesty: Each student is charged with notice and knowledge of the contents and provisions of Coastal Bend College's rules and regulations concerning student conduct. All students shall obey the law, show respect for properly constituted authority, and observe correct standards of conduct. Scholastic dishonesty shall constitute a violation of these rules and regulations and is punishable as prescribed by Coastal Bend College Policies FLB (Local) and FM (Local). Scholastic dishonesty shall include, but not be limited to, cheating on a test, plagiarism, and collusion.

See at: [FLB \(Local\)](#) and [FM \(Local\)](#).

See the [Student Handbook](#) for further explanation of Scholastic Dishonesty.

Copyright Law and Intellectual Property Rights Policy: Copyright is the right of an author, artist, composer or other creator of a work of authorship to control the use of his or her work by others. Protection extends to literary works, musical works, dramatic works, pantomimes and choreographic works, pictorial and graphic works, sculpture, motion pictures and other audiovisual works, sound recordings and architectural works. Generally speaking, a copyrighted work may not be reproduced by others without the copyright owner's permission. The public display or performance of copyrighted works is similarly restricted. Generally, the unauthorized reproduction, performance or distribution of a copyrighted work is copyright infringement and may subject the infringer to civil and criminal penalties. The Fair Use Doctrine outlines exceptions to this Law and is outlined in Coastal Bend College Policy, [CT \(Legal\)](#).

Coastal Bend College, its faculty, students and employees must comply with Copyright Law. Detailed information on Copyright Law and Intellectual Property Rights is available in Coastal Bend College Policy [CT \(Legal\)](#) and [CT \(Local\)](#).

Questions regarding this information should be directed to the Director of Library Services at: library@coastalbend.edu or the Office of Marketing and Public Relations at: socialmedia@coastalbend.edu.

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NOTE: The College website (www.coastalbend.edu) serves as the main source with the most current version of the Coastal Bend College Board Policies and the Coastal Bend College Catalog.