

Course Syllabus

CHEM 1406
Introductory Chemistry I (4005015103)

Course Description: 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.

Semester Hours Credit: 4

Lecture/Lab Hours: 3-3

Prerequisite: 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): *Essentials of General, Organic, and Biochemistry (2nd edition)* ISBN: 9780073511191

Student Learning Outcomes:

Upon successful completion of this course, students will:

1. Demonstrate proficiency in the use of laboratory equipment and common procedures used in the laboratory.
2. Be able to make conversions using metric and English units.
3. Be able to describe the fundamental particles of the atom and relate to electronic configuration to the periodic table and ionic/covalent bonding.
4. Be able to write formulas and names of inorganic compounds and give the products of common chemical reactions.
5. Be able to describe the mole and relate the use of it in stoichiometric calculations.

6. Be able to explain solute interactions in an aqueous solution and use molarity and percentage to describe their concentration.
7. Be able to explain the interactions acids, bases and salts in aqueous solutions and explain the reactions and purpose of a buffer.
8. Be able to name and draw the structures of representative compounds of each class of organic compounds: hydrocarbons, alcohols, amines, ethers, aldehydes, ketones, carboxylic acids and esters and list applications for the more common members of each class.
9. Be able to use structure and physical and chemical properties to explain selected characteristics of organic compounds, optical isomerism, melting points, boiling points, and reactions.
10. Be able to name and explain the structures, characteristics and applications of selected carbohydrates within monosaccharides, disaccharides, and polysaccharides.
11. Be able to list several classes of lipid and explain the structural characteristics of fats and oils, as well as describe the preparation of soaps and detergents and action in the cleaning process.
12. Be able to explain the structures of amino acids and how they form proteins. They will be able to distinguish the function and characteristics of primary, secondary, tertiary and quaternary structures in proteins.
13. Be able to understand the concept and structure of DNA and RNA and how the genetic code creates proteins from the base units of RNA.

Evaluation Methods:

Five (5) major exams will be given in the lecture portion of this course; of these exams, you may drop one exam if no exams are missed. You may not drop the final exam unless you are exempt. The final exam will be up to 100% comprehensive, depending on the amount of untested material remaining before the final exam. Points will be assigned for each exam, quiz, homework assignment, etc. All regular exams will be worth 100 points, but the final 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 the final exam.

The final grade will be determined by the number of points you have earned divided by the total points possible and multiplied by 100, as a percentage. Lab policies and grades are explained separately. Lecture will count 75% and lab 25% of your 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.

Intellectual Property: Student /Third Party Works: Rights to copyrightable or patentable works created by a student or a third party, that is, not a College District employee, shall reside with the author/ creator. Detailed information on Copyright Law and Intellectual Property Rights is available in Coastal Bend College Policy [CT \(Legal\)](#) and [CT \(Local\)](#).

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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.