

Course Syllabus

CHEM 2423

Organic Chemistry I (4005045203)

Course Description: Fundamental principles of organic chemistry will be studied, including the structure, bonding, properties, and reactivity of organic molecules; and properties and behavior of organic compounds and their derivatives. Emphasis is placed on organic synthesis and mechanisms. Includes study of covalent and ionic bonding, nomenclature, stereochemistry, structure and reactivity, reaction mechanisms, functional groups, and synthesis of simple molecules. Laboratory activities will reinforce fundamental principles of organic chemistry. Methods for the purification and identification of organic compounds will be examined. THIS COURSE IS INTENDED FOR STUDENTS IN SCIENCE OR PRE-PROFESSIONAL PROGRAMS.

Semester Hours Credit: 4

Lecture/Lab Hours: 3-3

Prerequisite: CHEM 1412, General Chemistry II

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): *Organic Chemistry (8th edition)* ISBN: 9780840054449

Student Learning Outcomes:

Upon successful completion of this course, students will:

1. Classify organic compounds by structure, molecular orbitals, hybridization, resonance, tautomerism, polarity, chirality, conformation, and functionality.
2. Identify organic molecules using appropriate organic nomenclature.

3. Describe the principle reactions for syntheses of molecules, ions, and radicals.
4. Describe organic reactions in terms of radical and ionic mechanisms.
5. Describe the use of spectroscopic data to determine the structure of organic molecules.
6. Formulate appropriate reaction conditions for the synthesis of simple organic molecules.
7. Perform chemical experiments, analysis procedures, and waste disposal in a safe and responsible manner.
8. Utilize scientific tools such as glassware and analytical instruments to collect and analyze data.
9. Identify and utilize appropriate separation techniques such as distillation, extraction, and chromatography to purify organic compounds.
10. Record experimental work completely and accurately in laboratory notebooks, and communicate experimental results clearly in written reports.
11. Demonstrate a basic understanding of stereochemistry.
12. Classify organic compounds by structure, molecular orbitals, hybridization, resonance, tautomerism, polarity, chirality, conformation, and functionality in laboratory reports.
13. Identify organic molecules using appropriate organic nomenclature in laboratory reports.
14. Perform organic syntheses of molecules.
15. Describe organic reactions in terms of radical and ionic mechanisms in laboratory reports.
16. Use spectroscopic data to determine the structure of organic molecules.

Evaluation Methods:

The course grade is based upon four (4) exams (55%), a comprehensive final exam (20%), and the laboratory grade (25%). The average of about twelve (12) experiments determines the laboratory 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.

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Coastal Bend College



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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.