Introduces fundamental chemistry of carbon compounds, including structures, physical properties, syntheses and typical reactions. Emphasizes reaction mechanisms. Prerequisite(s): CHM 241 with grade of C or higher. Lecture 3 hours. Total 3 hours per week. 3 credits

The general purpose of this course is to prepare the student for advanced study in organic chemistry through development of: skills in synthetic organic problem solving and in critical thinking, an understanding of the methods of organic chemistry, understanding of the general concepts and principles of organic chemistry.

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CHM 241 with a grade of C or higher

Upon completing the course, the student will be able to:

- Describe and apply the rules of IUPAC nomenclature for alcohols, aldehydes, ketones, carboxylic acids, derivatives of carboxylic acids, arenes, and amines, including stereochemical assignments.
- Explain trends in physical properties for organic functional groups, such as intermolecular forces, acidity, solubility in water and organic solvents, melting points and boiling points.
- Interpret spectrum from instrumentation such as IR, NMR, UV-Vis and MS to determine the structure of appropriate families.

- Explain molecular stability and with concepts of resonance, conjugation, and by showing stepwise reaction mechanisms with Lewis structures and curved arrows that demonstrate electron flow.
- Draw the reaction mechanisms of carbonyl group compounds, including condensation reactions, keto-enol tautomerism, and nucleophilic addition reactions with carbon, nitrogen, oxygen or hydrogen nucleophiles.