

CHEM& 243 : Organic Chemistry III

Credits 3

Third course for individuals planning to take three quarters of organic chemistry. Polyfunctional compounds, lipids, carbohydrates, amino acids, proteins, and nucleic acids. This class may include students from multiple sections. (Elective)

Prerequisites

2.0 or higher in [CHEM& 242](#) or instructor permission

Course Outcomes

Interpret patterns of reactivity for reactions of alcohols, carbonyl, and aromatic compounds, and provide electron-pushing mechanisms and multistep products where applicable.

Apply IUPAC nomenclature rules and predict trends in physical properties for simple organic molecules based on their functional groups.

Provide reagents or predict products for reactions of carbon nucleophiles, such as Grignard and Gilman reagents.

Apply resonance and/or molecular orbital theory in determining the stability of conjugated systems and predicting the product of conjugate addition reactions (1, 2 - and 1,4- conjugate additions, cycloadditions, etc.)

Provide reagents or predict products for reactions at the alpha carbon.

Classify and identify basic biomolecules such as carbohydrates, amino acids, lipids, and nucleic acids.

Apply basic organic reactions in a biological context, as in the reactions of carbohydrates, amino acids, lipids, and nucleic acids.

Design syntheses of organic molecules of moderate complexity using multiple synthetic steps to produce the highest yield using the fewest steps and/or protecting groups.

Apply knowledge of reaction mechanisms to predict/explain the outcome of a reaction.