



Organic Chemistry (1)

| Course Code | Course Num. | Course Name | Credit Hours | Lec. | Lab. | Tut. | Prerequisites |
|-------------|-------------|-----------------------|--------------|------|------|------|---------------|
| CHM | 121 | Organic Chemistry (1) | 4 | 2 | 2 | 2 | CHM 101 |

Objectives:

- Accurately represent the structure of any organic compound, both on paper and in three dimensional space using models or drawings.
- Correctly name any organic compound using IUPAC nomenclature and depict the molecular structure.
- Account for the physical properties and chemical reactivity of any organic compound on the basis of molecular structure.
- Predict the outcome of an organic reaction.
- Recognize important substances and chemical processes which have practical applications in household, laboratory, industry, and medicine.

Syllabus:

Fundamental concepts: Introduction to nomenclature, predict bond polarity based on electronegativity trends, describe a carbon's hybridization.

Alkanes and their stereochemistry: Name a simple alkane given its structure; discuss alkane halogenation as a free radical substitution reaction.

Cycloalkanes and their stereochemistry: Name a simple cycloalkane given its structure, stability and ring strain, Axial and Equatorial bonds.

Alkynes: Name a simple alkyne given its structure Preparation of alkynes, Dehydrohalogenation of alkyl dihalides, Reaction of metal acetylides with primary alkyl halides.

An Overview of organic Reactions: Kinds of organic reactions, How organic reaction occur, Mechanisms, Radical reactions, Polar reaction.

Stereoisomerism: Recognise the presence of a chiral center (asymmetric carbon) in a structure and define the meaning of the term enantiomer.

Organohalides: Naming alkyl halides, structure of alkylhalides, preparing of alkyl halides from alkanes, radical halogenations, preparation from alkenes.

Reactions of Alkyl Halides: Nucleophilic substitutions, The Discovery of the Nucleophiles substitution reaction, The SN2 Reactions, The SN1 Reaction

Text book:

Organic Chemistry, John McMurry. January 16, 2007 | ISBN-10: 0495118370 | ISBN-13: 978-0495118374. 7ed (2008)

References:

Organic Chemistry, Paula yurkanis Bruice, 2 Ed, PRENTICE HALL, Upper saddle River New Jersey 07458), 1998.

1. Morrison, R. T.; Boyd, R. N. "Organic Chemistry", 6th edition, Prentice Hall of India, (1996).