

Introduction to the module

Chemistry has made a profound impact on the society. It is intimately linked to the well-being of human kind. Organic chemistry is not only an interesting subject, but also a logical one. It is logical because its topics can be connected in a steady progression from simple to complex. The central message of chemistry is that the properties of a substance come from its structure. Organic chemistry has always been, and continues to be, the branch of chemistry that best connects structure with properties. Students retain the material best, however, if they understand how organic reactions take place.

This module comprises five units. It presents a thorough explanation of organic chemistry to enable the undergraduate students to learn the subject in a clear, direct, simple, and understandable way. The main focus of this module is to explain reaction mechanisms with different type of molecules in different reaction conditions. As students master these laws and principles, they will soon get to the point where they can predict much of what will come. Unit-1 explains the aromaticity and how aromaticity changes the behavior of compounds for chemical reactions. Unit-2 discusses about amines, its basicity and chemical characteristics. Unit-3 is about carbonyl compounds. Electrophilic substitutions are covered in unit-1 and nucleophilic substitutions are explained in unit-3, making the students aware about both type of reaction conditions, and its mechanism in detail. Unit-4 has compiled all reduction and oxidation reactions, students will come across at every step in their study. Unit-5 is based on biomolecules. This unit is mainly based on the structures of these biomolecules to make the students understand the different types of bonding occur in nature.

Exercises are designed in the end of each unit for students to apply important principles and provoke thinking process to solve them.

Module contents:

- The chemistry of Aromatic compounds
- Amines
- Chemistry of Carbonyl Compounds
- Oxidation-Reduction Reactions
- Introduction to Chemistry of Biomolecules

References:

- ✓ Francis A. Carey, Organic Chemistry, 4th edition.
- ✓ Paula Y. Bruice, Organic Chemistry, 4th edition.
- ✓ Ohn McMurry, Organic Chemistry, 8th edition.
- ✓ Janice G. Smith, Organic Chemistry, 3rd edition.
- ✓ T.W. Graham Solomons and Craig B. Fryhle, Organic Chemistry, 10th edition.
- ✓ Internet