



UC206 August 2:1

Basic Organic Chemistry

Instructor

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Email:

Department: Organic Chemistry

Course Time: Tue, 11 AM; Thu, 9-30 AM

Lecture venue: UG Building II

Detailed Course Page:

Announcements

Brief description of the course

The course is the first organic chemistry course in the undergraduate program of the institute in which the students are taught starting from nomenclature of organic molecules to their structures and bondings, aromaticity, acids and bases, reaction mechanisms like substitution, elimination, addition and rearrangements, oxidation and reduction.

In the second part of the course, they are taught chirality and stereochemistry and why they are important in understanding the basic biological processes, drug-receptor interactions etc. This is intended to help the students to understand the three dimensionality of organic and biomolecules and their significance. They are also taught some basic methods to make small chiral molecules by stereoselective/stereospecific approaches, separation of chiral molecules, optical activity, etc. Conformation of cyclic and acyclic systems are taught to enable them to appreciate and apprise them about the conformations of peptides/proteins, biomolecules like DNA and RNA.

The course entails to give the students an overall feeling about the usefulness of organic chemistry in diverse

areas ranging from natural products, drugs and pharmaceuticals, dyes and pigments, detergents, food and beverages, essential oils and fragrance, polymers to electronic materials and also in knowing the molecules of all living systems and understanding the basic biological processes at molecular level.

Prerequisites

None

Syllabus

Nomenclature of organic molecules to their structures and bondings, aromaticity, acids and bases, reaction mechanisms like substitution, elimination, addition and rearrangements, oxidation and reduction.

chirality and stereochemistry; elements of symmetry; configurational nomenclature; optical activity; chiral resolution and kinetic resolution; stereospecific and stereoselective reactions and mechanisms; conformation of acyclic and cyclic molecules.

Course outcomes

The course is the first organic chemistry course in the undergraduate program of the institute in which the students learn about the usefulness of organic chemistry in diverse areas and everyday life ranging from natural products, drugs and pharmaceuticals, dyes and pigments, detergents, food and beverages, essential oils and fragrance, polymers to electronic materials and also in knowing the molecules of all living systems and understanding the basic biological processes at molecular level.

They are taught why chirality and stereochemistry are important in understanding the basic biological processes, drug-receptor interactions etc. This is intended to help the students to understand the three dimensionality of organic and biomolecules and their significance. Lectures on conformations of cyclic and acyclic systems apprise them about the conformations of peptides/proteins, biomolecules like DNA and RNA.

Grading policy

35% for practicals, 65% for theory

Assignments

Resources