



CHM1142 Organic Chemistry

[60h+60h exercises] 10 credits

This course is taught in the 2nd semester

Teacher(s): Jean-Philippe Soumillion
Language: French
Level: First cycle

Aims

The aim of this course is to enable the student to manipulate the terminology, the molecular structures and the mechanistic schemes of organic chemistry with a sufficient ease. This needs to be considered in the introducing perspective of the biochemistry learning taking place during the second year.

Main themes

This course will recall the prerequisites of the general chemistry which are of use in organic chemistry. The main concepts of the organic chemistry, necessary for a good understanding of biochemistry, will be introduced. Nomenclature, molecular structures, reaction mechanisms and stereochemistry of the basic compounds of organic chemistry will be explained. First links between these molecules and macromolecular biological compounds will be established.

Content and teaching methods

The course is divided in 3 parts:

- An introduction recalls basic concepts: bond formation, isomerism, polarity and solubility relations, acids and bases.
- In the second part, the organic functional groups, the reaction mechanisms and molecular structure, as well as the concepts of stereoisomerism are introduced. The compounds studied are alkanes and cycloalkanes, alkenes and alkynes, aromatic compounds, halogenated compounds, aldehydes and ketones, carboxylic acids and derivatives, amines. Substitution, addition, elimination and rearrangement are the most important mechanisms detailed during this section of the course.
- In a third part, the acquired concepts are applied in several examples of molecules from the biology: sugars, amino acids and proteins.

Other information (prerequisite, evaluation (assessment methods), course materials recommended readings, ...)

Prerequisites: basic knowledge in general chemistry: atomistic, thermodynamic, acids bases reactions, redox reactions, pH and nomenclature.

Support: syllabus made of teaching notes. Reference book: "Introduction à la chimie organique" by Hart and Conia, Interédition, Paris. Self-learning syllabus containing exercises, solutions and questions from recent examinations. Molecular models are available to help three-dimensional perception of organic chemistry aspects. A CD-rom contains overall cursus (including 3D animations) and a section of interactive self-learning.

Other credits in programs

SCA11BA	Première année polyvalente en sciences naturelles - groupe A	(10 credits)	Mandatory
VETE11BA	Première année de bachelier en médecine vétérinaire	(10 credits)	Mandatory