BIR1317 Chimie organique (3è partie)

[30h+15h exercises] 3 credits

This course is taught in the 1st semester

Teacher(s): Jacqueline Marchand
Language: French
Level: First cycle

Aims

Acquiring of knowledge and know-how in organic chemistry by the systematic study of reaction mechanisms and of the factors which have an influence on the course of these mechanisms.

Main themes

Acquiring of fundamental reasonings in chemical reactivity of organicmolecules.
The mechanisms are discussed in terms of :
- acid-base interactions, nucleophiles and electrophiles, hard and soft reagents.
- substituents effect, solvents effect, effect of catalysts on reactivity and selectivity.
- notions of selectivity concern the chemoselectivity (functional groups compatibility), the regioselectivity (ambident reagents), and the stereoselectivity (stereoelectronic control).

Content and teaching methods

Content and methods : mastering of the scientific meaning in organic chemistry by the systematic study of reaction mechanisms. Recall of fundamental notions : structure and reactivity, acids and bases, carbanions and carbocations, kinetic and energetic aspects of reactions. Mechanisms of heterolytic reactions : substitution, elimination, addition, reactions of carbonyls and aromatic nuclei. Free radicals and homolytic reactions. Oxidations and reductions. Pericyclic reactions (Woodward - Hoffmann's rules). Photochemical reactions.

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

- Pre-requisite CHIM 1151 "General chemistry, first part"; CHIM 1251 "General chemistry, second part";
CHIM 1170 "organic chemistry, first part".
- Evaluation : final examination.

Other credits in programs

BIR13BA/C	Troisième année de bachelier en sciences de l'ingénieur, orientation bioingénieur (option : chimie)	(3 credits)	Mandatory