UCL Université catholique de Louvain

# LCHM1141

*2014-2015*

# Organic chemistry 1

| 5.0 credits | 30.0 h + 30.0 h | 2q |
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| Teacher(s) : | Marko Istvan ; |
| Language : | Français |
| Place of the course | Louvain-la-Neuve |
| Main themes : | The goal of this course is not only to provide the basics of modern organic chemistry, but also to link them to certain fundamental concepts detailed in the general chemistry course (chemical bonding, thermodynamics, chemical kinetics, acid-base reactions). The first part of the course will essentially install the basic concepts by the description of the main classes of functional groups and the organic nomenclature. The physico-chemical properties as well as the electronic effects will be covered then applied to specific examples. The 3D structures of organic molecules, as well as the various isomerisation phenomena that result from it, will be detailed then applied to different examples linked to fundamental biological and biochemical processes. The introduction to chemical reactivity is centred on four main classes of organic functions : alkenes, halogenoalkanes, carbonyl derivatives (aldehydes and ketones) and carboxylic acids and their derivatives. This part leads to the introduction of new concepts, among which the notion of reactive intermediates: nucleophiles and electrophiles, the notion of reaction rate, selectivity in organic chemistry, interconversion between functional groups. In many cases, examples taken from biochemical mechanisms and linked to the field of life sciences will illustrate these concepts. Examples pertaining to daily life will also be used, including polymers and drugs. The theoretical course will be completed by exercice sessions and by a practical course which will familiarize the student with basic techniques such as distillation and chromatography, and teach him some experimental method. |
| Aims : | The main objective of the course is to teach students the basic principles of organic chemistry. The first part of the course will cover the fundamental aspects of structural organic chemistry to familiarize the students with the main families of organic chemistry functions as well as the 3D structure of organic molecules. The basics of reactivity will also be covered using four main classes of functions to provide the students with the concepts of reactivity and mechanisms. The course will be frequently illustrated with examples linked to other scientific disciplines, in particular to the field of life sciences.<br>*The contribution of this Teaching Unit to the development and command of the skills and learning outcomes of the programme(s) can be accessed at the end of this sheet, in the section entitled "Programmes/courses offering this Teaching Unit".* |
| Other infos : | Prerequisites: Secondary school level. Course of general chemistry bac11: CHM1111.<br>Evaluation: theorical questions and practical exercises (exercises will be similar than those made during course and exercise sessions). Written examination with facultative oral questions.<br>Support: book "Introduction à la chimie organique" by Hart/Conia (InterEditions). |
| Cycle and year of study : | > Bachelor in Bioengineering<br>> Bachelor in Chemistry<br>> Bachelor in Information and Communication<br>> Bachelor in Philosophy<br>> Bachelor in Pharmacy<br>> Bachelor in Computer Science<br>> Bachelor in Economics and Management<br>> Bachelor in Motor skills : General<br>> Bachelor in Human and Social Sciences<br>> Bachelor in Sociology and Anthropology<br>> Bachelor in Political Sciences: General<br>> Bachelor in History of Art and Archaeology : General<br>> Bachelor in Mathematics<br>> Bachelor in History<br>> Bachelor in Biomedicine<br>> Bachelor in religious studies<br>> Bachelor in Biology<br>> Bachelor in Geography : General |
| Faculty or entity in charge: | CHIM |