UCLouvain

lmapr1230

2020

Organic chemistry

Due to the COVID-19 crisis, the information below is subject to change, in particular that concerning the teaching mode (presential, distance or in a comodal or hybrid format).

5 credits	30.0 h + 30.0 h	Q1

Teacher(s)	Demoustier Sophie ;Fustin Charles-André ;
Language :	French
Place of the course	Louvain-la-Neuve
Main themes	The course is divided in two parts. The first part deals with 'generalities' required for a good understanding of the reactivity in organic chemistry, namely the reasons why organic compounds do or do not react in given conditions. The second part describes the chemical behavior of the main organic compounds, illustrating the relationships between the structure of a given functional group and its reactivity. The lessons will be frequently illustrated with examples from other disciplines such as materials science and life sciences.
Aims	**Contribution of the course to the program objectives** Regarding the learning outcomes of the program of Bachelor in Engineering Sciences, this course contributes to the development and the acquisition of the following learning outcomes: LO 1.1 : Apply concepts, laws, reasoning to disciplinary reduced problems. **Specific learning outcomes of the course** At the end of the course, the student will be able to: 1 • distinguish the different types of isomers (structure and geometrical isomers and stereoisomers) ; • recognize the different types of reactants (nucleophiles, electrophiles, radicals, acids and bases) ; • describe the electrons migration within an organic molecule (inductive and conjugation effects) as well as during a chemical reaction between two given compounds; • recognize and represent the main functional groups of organic compounds ; • establish relations between molecular and spatial structures of organic molecules and some properties, in particular, their reactivity ; • predict and explain the expected result for the main types of organic reactions, including their mechanism. - - - - *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".*
Evaluation methods	**Due to the COVID-19 crisis, the information in this section is particularly likely to change.** Students are evaluated through a final written exam. A test will also be organized during the semester and can contribute to the final grade.
Teaching methods	**Due to the COVID-19 crisis, the information in this section is particularly likely to change.** The course is based on lectures and exercises-based learning
Content	**Part 1** 1. Structure, chemical bonds and geometry of organic molecules 2. Isomerism 3. Reactivity in organic chemistry (energy diagrams, intermediates, types of reactants, electronic effects) **Part 2** 4. Alkanes , alkenes and alkynes 5. Alkyl halides 6. Aromatic compounds 7. Alcohols, thiols, ethers and epoxydes 8. Aldehydes and ketones 9. Carboxylic acids and their derivatives 10. Amines and their derivatives
Inline resources	http://moodleucl.uclouvain.be/course/view.php?id=8644

Bibliography	• Les slides présentées au cours et les énoncés des exercices sont disponibles sur Moodle. Ouvrages de référence recommandés mais non obligatoires: • L. Craine, D. Hart, C. Hadad, Chimie Organique 1 et 2, Dunod, 2008 • D. Klein, Organic Chemistry, Wiley, 2011
Faculty or entity in charge	FYKI

Force majeure

Evaluation methods	Students are evaluated through a final written exam. A test will also be organized during the semester and can contribute to the final grade.

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Aims
Specialization track in applied Chemestry and Physics	FILFYKI	5		
Minor in Engineering Sciences : Applied Chemistry and Physics (only available for reenrolment)	MINFYKI	5		
Minor in Applied Chemistry and Physics	MINOFYKI	5		