UCL Université catholique de Louvain

LCHM1343

2015-2016

Industrial organic chemistry

3.0 credits	22.5 h + 7.5 h	1q

Teacher(s) :	Marko Istvan ;
Language :	Français
Place of the course	Louvain-la-Neuve
Main themes :	Production and transformation of major industrial organic products from carbo- and petrochemistry will be treated. The importance of catalysis will be emphasized. Finally some aspects of fine chemistry will be discussed.
Aims :	As a complement to the general organic chemistry, the applied course underlines the industrial point of view in organic synthesis. By this approach, the student will discover organic chemistry in a new context. He will recognize at the same time the relative importance of reactions as well as economic and ecologic criteria. *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".*
Content :	The sources of primary organic products are reviewed (coal, oil, natural gas and some agricultural resources). The productions of the primary products from these sources are presented (coking, cracking, syngas). The concepts of "generation" and "family" of products are introduced together with the notion of "building blocks". In view to determine the more suitable pathway of synthesis, economical criteria are discussed. The major "building" blocks are presented according to their size (C1-C5 and BTX fraction). This means that the favourites(s) pathway(s) of synthesis of the major compounds (in term of volume of production) are presented together with the main uses of these compounds. Some aspects of industrial catalysis are discussed and illustrated with some particular cases with a description of their mechanisms of action. Finally, among some aspects of fine chemistry, the production of pure enantiomers and the use of microorganisms and enzymes in industrial organic chemistry are presented.
Other infos :	Background: Basic notions in general organic and inorganic chemistry (1st and 2nd year of the bachelor degree). Evaluation: written exam. Main support: K. Weissermel, H.J. Arpe "Industrial Organic Chemistry", 4th edition, (Wiley)-VCH, ISBN 3-527-30578-5.
Faculty or entity in charge:	CHIM

Programmes / formations proposant cette unité d'enseignement (UE)				
Intitulé du programme	Sigle	Credits	Prerequis	Acquis d'apprentissage
Master [120] in Chemistry	CHIM2M	3	-	🔍
Master [60] in Chemistry	CHIM2M1	3	-	🔍
Additionnal module in Chemistry	LCHIM100P	3	-	🔍