

3.00 credits

22.5 h + 7.5 h

Q1

**This learning unit is not being organized during this academic year.**

Language :	French > English-friendly
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.
Learning outcomes	<b>At the end of this learning unit, the student is able to :</b>  1 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.
Evaluation methods	Written exam
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.
Bibliography	Industrial Organic Chemistry, K. Weissmerl, H.J. Arpe, 2nd revised and extended edition, (Wiley)-VCH, ISBN 0-89573-861-9
Other infos	<b>Background :</b> Basic notions in general organic and inorganic chemistry (1st and 2nd year of the bachelor degree).
Faculty or entity in charge	CHIM

<b>Programmes containing this learning unit (UE)</b>				
Program title	Acronym	Credits	Prerequisite	Learning outcomes
Master [60] in Chemistry	CHIM2M1	3		