

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 + 22.5 h

Q2



This biannual learning unit is not being organized in 2020-2021 !

Teacher(s)	Glinel Karine ;Jonas Alain ;Van Ruymbeke Evelyne ;
Language :	English
Place of the course	Louvain-la-Neuve
Main themes	<p>Physical and chemical properties of polymers, environmental and societal issues related to the use of polymers. More specifically, specific themes will be addressed through a series of debates on cutting-edge topics related to polymers. These topics will be subject to change based on current events. For example, these debates could address the following issues:</p> <ul style="list-style-type: none"> - Bio-sourced polymer materials: a sustainable solution? - Towards greater biodegradability of polymer materials: is this realistic? - Micro-plastics and oceans: what to do? - Management of multi-component materials: what are the solutions? - Advantages and drawbacks of the use of nanoparticles in polymer materials - Can we do without plastics in agriculture / electronics / packaging / telecommunications / etc. - Plasticizers - to banish or tolerate? - Plastic and use of fossil resources - an infernal couple? - Life is based on macromolecules - why do not we?
Aims	<p>Contribution of the course to the program objectives</p> <p>Axis 1: 1.1, 1.3 To be able to confront different complex and contradictory information, to analyze them critically, and to combine a series of tools, concepts, reasoning to respond in a judicious and well-argued way to the problem.</p> <p>Axis 2: 2.3 Be able to analyze and take into account a set of different criteria (efficiency, quality, safety, carbon footprint, recyclability, alternatives, ...) to determine the relevance of a process.</p> <p>Axis 3: 3.1, 3.3 Document and summarize the state of current knowledge in the field. Synthesize this research work to propose solutions or alternatives to the problem.</p> <p>Axis 4: 4.1, 4.2, 4.3, 4.4 Collectively organize the preparation of debates, be able to defend ideas before other actors from different points of view, organize the work to produce a quality report / video.</p> <p>Axis 5: 5.2, 5.4, 5.6 Argue and convince others, analyze and use technical documents.</p> <p>Axis6: 6.2 Discuss the relevance of a solution by looking beyond technical issues.</p> <p>----- <i>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".</i></p>
Evaluation methods	<p>Due to the COVID-19 crisis, the information in this section is particularly likely to change. The courses will be organized in the form of debates.</p> <p>For each of these:</p> <ul style="list-style-type: none"> - Students will receive the question(s) to be discussed. They will be divided into groups, which will have to defend a different point of view. - Reference material will be provided: scientific articles, press articles, video, reports, ... in order to prepare the debate. A follow-up of their preparation will be assured by the supervisors in the form of tutoring sessions. - The debate will be conducted by a course leader, possibly with the help of an expert who will be invited for his specialized knowledge on the subject. - Following the debate, the students will have to synthesize it in the form of an article or a video capsule summarizing the ideas discussed and conclusions put forward, while putting them in perspective.

Teaching methods	<p>Due to the COVID-19 crisis, the information in this section is particularly likely to change.</p> <p>The courses will be organized in the form of debates. For each of these:</p> <ul style="list-style-type: none"> - Students will receive the question(s) to be discussed. They will be divided into groups, which will have to defend a different point of view. - Reference material will be provided: scientific articles, press articles, video, reports, ... in order to prepare the debate. A follow-up of their preparation will be assured by the supervisors in the form of tutoring sessions. - The debate will be conducted by a course leader, possibly with the help of an expert who will be invited for his specialized knowledge on the subject. - Following the debate, the students will have to synthesize it in the form of an article or a video capsule summarizing the ideas discussed and conclusions put forward, while putting them in perspective.
Content	<p>The chosen topics are mainly based on the physical and chemical properties of the polymers, while addressing other, broader themes (polymer life cycle, environmental and economic issues, ...)</p>
Inline resources	<p>The course material will be on Moodle. The course is based on different sources of information: book chapters, scientific articles, articles and press releases, online videos and podcasts, reports, ...</p>
Faculty or entity in charge	<p>FYKI</p>

Programmes containing this learning unit (UE)				
Program title	Acronym	Credits	Prerequisite	Aims
Master [120] in Chemical and Materials Engineering	KIMA2M	5		