

5.0 credits	0 h + 45.0 h	2q
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Teacher(s) :	Fustin Charles-André ; Devaux Jacques (coordinator) ; Bailly Christian ; Legras Roger ; Jonas Alain ; Demoustier Sophie ; Nysten Bernard ; Gohy Jean-François ;
Language :	Français
Place of the course	Louvain-la-Neuve
Main themes :	<p>The context of each project will find its origin in a case of real industry life. Collaboration with industrial people will be sought in selecting the themes. The students will work by groups of about 4 (5 teachers*2groups by teacher = 40 students max.)</p> <ul style="list-style-type: none"> - The students could, for example, receive a virtual budget to analyse a piece of equipment ("reverse engineering") and order any analysis they will find useful (the practical measurement should not necessarily, (owing to time constraints) be physically executed by the students, but a minimum should preferably be performed. The interpretation of results, the selection of analytical techniques should be done by and the conclusions should be drawn by the students. - Such a project could also be to select the most suited polymer material for a given application, including the contacts with various suppliers and experts, with verification of collected data and their actual fit with the application requirements. - Another example of project could be linked to the recycling of an object or of a polymer material, with its chemical (degradation, stabilisation) as well as mechanical, technical, economical and environmental aspects of the process. - Analytical techniques should be essentially described elsewhere in the master (or bachelor) program, but others interesting ones could be discovered from case studies.
Aims :	<p>This course aims at confronting students with practical problems linked to synthesis, processing, use, life cycle of polymer materials. It follows MAPR2019 "Science and Engineering of Polymers" (or CHIM 1361 Introduction to Polymer Chemistry) which constitute minimum prerequisite. It takes place, in principle, in parallel with MAPR 2010 & 2018 and/or CHIM 2261 and complements these courses as instead of mentioning "practical cases from industrial world or from personal experience of teachers" it is actually based on cases from daily practice in polymer industry. This course will also allow, in turn, to actualize examples in use in magisterial courses MAPR 2010 & 2018 and/or CHIM 2261. At the end of this course, students should have acquired, by the daily practice, the ability to manage problems dealing with quality control, selection, or customer problems, which are the daily work of young engineers in the technico-commercial sector of polymer materials.</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>
Content :	<p>Methods :</p> <p>There is no magisterial part in this course which is of the type "project based learning". Each project will be supervised by a member from the teaching team.</p> <p>This project will occur in M1 Q2, in parallel or even before other courses. It could thus be required from the students to anticipate the necessary learnings and to apply techniques before receiving the concerned courses : this is part of the method of project based learning. .</p> <p>At the end of the course, there will be a presentation of the results by the team of students, with the attendance of a jury made of teachers and, preferably, of industrial people having proposed its theme. A significant part of the quotation will be given to this group presentation</p>
Other infos :	Prerequisites : MAPR2019 (or CHIM 1361)
Cycle and year of study :	<p>> Master [120] in Chemical and Materials Engineering</p> <p>> Master [120] in Chemistry and Bio-industries</p> <p>> Master [120] in Chemistry</p>
Faculty or entity in charge:	FYKI