


In view of the health context linked to the spread of the coronavirus, the methods of organisation and evaluation of the learning units could be adapted in different situations; these possible new methods have been - or will be - communicated by the teachers to the students.

5 credits	0 h + 60.0 h	Q1
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Teacher(s)	Jacques Pascal ;Jonas Alain ;
Language :	English
Place of the course	Louvain-la-Neuve
Main themes	Functional materials, materials processing, functional devices, cost evaluation, promotional communication
Aims	<p>Given the AA repository of the program of "Master ingénieur civil en chimie et science des matériaux", this course contributes to the development, acquisition and evaluation of the following learning outcomes:</p> <p>1</p> <ul style="list-style-type: none"> <li>• 1.1, 1.2, 1.3</li> <li>• 2.1, 2.2, 2.3, 2.4</li> <li>• 3.1, 3.2, 3.3</li> <li>• 4.1, 4.2, 4.3, 4.4,</li> <li>• 5.1, 5.2, 5.3, 5.5, 5.6</li> <li>• 6.1, 6.2, 6.3, 6.4</li> </ul> <p>-----</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><b>Due to the COVID-19 crisis, the information in this section is particularly likely to change.</b></p> <p>The project is evaluated based on the formal quality and content of the website created by the students to describe their findings and product, and on the quality of the fund-raising video they have generated. An exam on some concepts of the project may also be organized.</p>
Teaching methods	<p><b>Due to the COVID-19 crisis, the information in this section is particularly likely to change.</b></p> <p>The project is led in small groups of students. It involves the reading a portfolio of review articles and book chapters, the watching of explanatory podcasts, the simulation of materials/devices properties (when appropriate), the conception of a device and the evaluation of its economical and societal impacts, the development of a professional website, and the making of a fund-raising video.</p>
Content	<p>The project focuses on the study of a specific class of materials starting from the analysis of a recent typical application, on the proposition of a conceptual device based on this material, on the evaluation of its potential economical impacts, and on the development of a supporting professional website and a fund-raising video. This project may be followed by a life-cycle analysis and a broader evaluation of the social and environmental impacts of the proposed technology within the frame of the course LMAPR2648. When this is the case, the project provides an integrated view of the complete development of a product based on advanced materials, from material to device and end-of-life (life-cycle analysis).</p>
Inline resources	Moodle website : <a href="https://moodleucl.uclouvain.be/course/view.php?id=11244">https://moodleucl.uclouvain.be/course/view.php?id=11244</a>
Bibliography	See the website of the project.
Other infos	This course requires basic knowledge of fundamentals of materials science (thermodynamics, mechanical properties, functional properties at an introductory level).
Faculty or entity in charge	FYKI

<b>Programmes containing this learning unit (UE)</b>				
Program title	Acronym	Credits	Prerequisite	Aims
Master [120] in Chemical and Materials Engineering	<a href="#">KIMA2M</a>	5		
Master [120] in Biomedical Engineering	<a href="#">GBIO2M</a>	5		