

KIMA2M - Introduction

Introduction

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In order to meet essential challenges such as energy management, communication and information, sustainable development and climate change, it is essential to foster scientific and technological creativity in the field of industrial materials and processes.

You

- have acquired solid knowledge of chemical or physical engineering and mathematics;
- are interested in research and development as well as production and management in cutting edge industries: chemistry, metals and materials, metallic products, plastics, electronics or the process industry;
- would like to take advantage of the most recent research advances in your area of specialisation.

Your future job

Jobs in chemical and materials engineering range from research and development to production and marketing.

You can become :

- A « systems » engineer :

Who designs new products or devices with specific properties or functions, e.g. a mitral valve, an electroluminescent polymer for a flexible display, a metallic alloy or a light composite for aerospace applications, a nanomaterial usable for memory storage.

- A « process » engineer :

Who develops new production processes or manages the operation of production units, e.g. a plastics extrusion line, a factory for the extraction of a pharmaceutical compounds from a given plant l, a water or waste treatment plant, a production line for electronic components, a production unit for a high purity chemical compound, etc.

- A combination of both :

For instance, you develop a polymer material for the automotive industry and the synthesis/compounding process required for its industrial scale up.

Your programme

The master offers:

- a specialised training in an international environment; from 2015-2016, all courses organized by the programme commission (i.e. courses with LMAPR2xxx designation) are taught in English ; assistance provided as needed to French-speaking students ("French-friendly" approach).
- an interdisciplinary approach to problem solving, rooted in physics and chemistry;
- research-based training : integration of students in experimental laboratories, research projects ;
- exposure to industry : factory visits, industry internships, graduation project in a company ;
- the possibility to obtain a dual degree if you are accepted in the Master's degree programme "Functionalised Advanced Materials & Engineering" (FAME), part of the Erasmus Mundus programme. It is entirely in English and starts with a year of general training either at the National Polytechnic Institute of Grenoble (France) or at the University of Augsburg (Germany); in the second year, students specialise in a field of materials sciences at one of 7 partner universities. UCLouvain offers a specialisation in materials and nano-structures engineering. Upon completing the programme, students are granted a dual Master's degree. More information available on the [web page](https://uclouvain.be/en/faculties/epl/en-master-fame.html) (<https://uclouvain.be/en/faculties/epl/en-master-fame.html>).

KIMA2M - Teaching profile

5.5 Draft documents that take into account demands and conventions of the field.

5.6 Make a convincing oral presentation possibly using modern communication techniques.

6. demonstrate rigor, openness, critical thinking and a sense of ethics in your work. Using the technological and scientific innovations at your disposal, validate the socio-technical relevance of a hypothesis or a solution and act responsibly (axis 6).

6.1 Apply the standards of your discipline (terminology, measurement units, quality, security and environmental standards).

6.2 Find solutions that go beyond strictly technical issues by considering sustainable development and the ethical aspects of a project (for example, "life cycle analysis" among others).

6.3 Demonstrate critical awareness of a technical solution in order to verify its robustness and minimize the risks that may occur during implementation. (This skill is mainly developed during the graduation project which requires the critical analysis of implemented techniques as well as research for the Master's thesis.)

6.4 Evaluate oneself and independently develop necessary skills for "lifelong learning" in the field (this skill is most notably developed through projects requiring bibliographic research).

Programme structure

The Master's degree programme consists of:

-a core curriculum (30 credits) including the graduation project (28 credits) and a religion course (2 credits);

-a professional focus (30 credits);

-one major;

-elective courses to round out the programme.

The overwhelming majority of courses is given in English (all courses with LMAPR2xxx designation and a large proportion of the courses organized by EPL), with assistance provided to French-speaking students (« French-friendly 0 f0 -1 0 593ro9ooun4ority ou-1 0 117ebush (all c

CORE COURSES [27.0]

- Mandatory
- ⊗ Optional
- △ Not offered in 2023-2024
- ⊙ Not offered in 2023-2024 but offered the following year
- ⊕ Offered in 2023-2024 but not the following year
- △ ⊕ Not offered in 2023-2024 or the following year
- Activity with requisites
- 🌐 Open to incoming exchange students
- 🚫🌐 Not open to incoming exchange students
- [FR] Teaching language (FR, EN, ES, NL, DE, ...)

Click on the course title to see detailed informations (objectives, methods, evaluation...)

				Year	
				1	2
○ LKIMA2990	Graduation project/End of studies project <i>The graduation project can be written and presented in French or English, in consultation with the supervisor. It may be accessible to exchange students by prior agreement between the supervisors and/or the two universities.</i>		EN [q1+q2] [] [25 Credits] 🌐 > French-friendly		x
○ LEPL2020	Professional integration work <i>Les modules du cours LEPL2020 sont organisés sur les deux blocs annuels du master. Il est fortement recommandé à l'étudiant. e de les suivre dès le bloc annuel 1, mais il.elle ne pourra inscrire le cours qu'au plus tôt l'année où il.elle présente son travail de fin d'études.</i>	Myriam Banaï Francesco Contino (coord.) Delphine Ducarme Jean-Pierre Raskin	EN [q1+q2] [30h+15h] [2 Credits] 🌐 > French-friendly	x	x

PROFESSIONAL FOCUS [30.0]

MAJOR IN CHEMICAL ENGINEERING [15.0]

- Mandatory
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- Mandatory
 - ✘ Optional
 - △ Not offered in 2023-2024
 - ⊘ Not offered in 2023-2024 but offered the following year
 - ⊕ Offered in 2023-2024 but not the following year
 - △ ⊕ Not offered in 2023-2024 or the following year
 - Activity with requisites
 - 🌐 Open to incoming exchange students
 - 🌐 Not open to incoming exchange students
-
- [FR]



MAJOR IN INTERDISCIPLINARY PROGRAM IN ENTREPRENEURSHIP - INEO

Commune à la plupart des masters de l'EPL, cette option a pour objectif de familiariser l'étudiant-e avec les spécificités de l'entrepreneuriat et de la création d'entreprise afin de développer chez lui les aptitudes, connaissances et outils nécessaires à la création d'entreprise.

Cette option rassemble des étudiants de différentes facultés en équipes interdisciplinaires afin de créer un projet entrepreneurial. La formation interdisciplinaire en entrepreneuriat (INEO) est une option qui s'étend sur 2 ans et s'intègre dans plus de 30 Masters de 9 facultés/écoles de l'UCLouvain. Le choix de l'option INEO implique la réalisation d'un mémoire interfacultaire (en équipe) portant sur un projet de création d'entreprise. L'accès à cette option, ainsi qu'à chacun des cours, est limité aux étudiant-es sélectionnés sur dossier. Toutes les informations sur <https://uclouvain.be/fr/etudier/ineo> (<https://uclouvain.be/fr/etudier/ineo>).

L'étudiant.e qui choisit de valider cette option doit sélectionner au minimum 20 crédits et au maximum 25 crédits. Cette option n'est pas

Course prerequisites

There are no prerequisites between course units (CUs) for this programme, i.e. the programme activity (course unit, CU) whose learning outcomes are to be certified and the corresponding credits awarded by the jury before registration in another CU.

The programme's courses and learning outcomes

For each UCLouvain training programme, a [reference framework of learning outcomes](#) specifies the the skills expected of every graduate on completion of the programme. Course unit descriptions specify targeted learning outcomes, as well as the unit's contribution to reference framework of learning outcomes.

KIMA2M - Information

Access Requirements

Master course admission requirements are defined by the French Community of Belgium Decree of 7 November 2013 defining the higher education landscape and the academic organisation of courses.

General and specific admission requirements for this programme must be satisfied at the time of enrolling at the university.

Unless explicitly mentioned, the bachelor's, master's and licentiate degrees listed in this table or on this page are to be understood as those issued by an institution of the French, Flemish or German-speaking Community, or by the Royal Military Academy.

In the event of the divergence between the different linguistic versions of the present conditions, the French version shall prevail.

SUMMARY

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- > [Specific access requirements](#)
- > [University Bachelors](#)
- > [Non university Bachelors](#)
- > [Holders of a 2nd cycle University degree](#)
- > [Holders of a non-University 2nd cycle degree](#)
- > [Access based on validation of professional experience](#)

