UCLouvain

CHIM2M

2024 - 2025

Master [120] in Chemistry

CHIM2M - Introduction

Introduction

Introduction

This master's degree trains top-level scientists able to solve contemporary problems linked to chemistry; it provides a solid theoretical formation and develops experimental ability, synthetic and critical way of thinking, as well as the rigour of scientific reasoning and expression.

The completion of a final year dissertation (master thesis) in one of the laboratories of the Institute of Condensed Matter and Nanosciences or the Institute of Biomolecular Science and Technology furthermore constitutes an initiation to research, opening the door to a potential doctorate.

Your profile

You

- want to help solve the great challenges of our time by creating new molecules with novel properties
- would like to work in university or public research institutes, in industrial laboratories,
- wish to develop experimental tools and sharp knowledge in advanced chemistry,
- envision to teach chemistry in upper secondary education classes.

Your future job

Chemistry is constantly developing and offers many job prospects. Industry is one of the largest employers: petrochemicals, pharmaceuticals, biotechnology, plastics and polymers, paint manufacturing, cosmetics, dyes, waste recycling, etc.

The chemist also puts his·her skills at the service of research (research institutes or industrial laboratories). Chemistry also opens up career opportunities in education, computer science, banking and insurance and other sometimes unsuspected professions. The environment is now an increasingly demanding sector.

Your programme

This master offers you

- a solid theoretical training in the fundamental orientations of chemistry ;
- high experimental and advanced research skills in chemistry;
- great freedom in setting up your program;
- an opportunity to test your skills in the field, in a research lab, in industry or in a high school class;
- the possibility of completing your internship or part of your Master's degree abroad.

			Year 1	Year 2
deux cours parmi les quatre suivants : (6 credits)				
⛒ LCHM2151	Advanced mass spectrometry	Charles-André Fustin	EN [q1] [22.5h+7.5h] [3 Credits] *> French-friendly*	x	x
⛒ LCHM2152	NMR Complements	Michael Singleton	EN [q1] [22.5h+7.5h] [3 Credits] *> French-friendly*	x	x
⛒ LCHM2122	Analysis physical methods of solids	Charles-André Fustin Yann Garcia	EN		

LIST OF FOCUSES

Three focused orientations are proposed that should be selected in view of your professional intentions at the end of your studies:

- « in-depth chemistry »: internship will be realized in a research laboratory ;
- « specialized : chemical industry »: internship will be realized in a company active in the chemical field ;
- « didactic »: this direction leads to the teaching profession.

However, this focus is not limiting for your future professional career as it only concerns 30 credits; employment opportunities and your future choices will be equally important.

> Research Focus *[en-prog-2024-chim2m-lchim200a]*
> Teaching Focus *[en-prog-2024-chim2m-lchim200d]*
> Professional Focus : Industrial Chemistry *[en-prog-2024-chim2m-lchim200s]*

RESEARCH FOCUS [30.0]

O Mandatory
Optional
△ Not offered in 2024-2025
⊘ Not offered in 2024-2025 but offered the following year
⊕ Offered in 2024-2025 but not the following year
△ ⊕ Not offered in 2024-2025 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, ...)

PROFESSIONAL FOCUS : INDUSTRIAL CHEMISTRY [30.0]

- Mandatory
- Optional
- Not offered in 2024-2025
- Not offered in 2024-2025 but offered the following year
- Offered in 2024-2025 but not the following year
- Not offered in 2024-2025 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

Content:

INEO INTERDISCIPLINARY TRAINING IN ENTREPRENEURSHIP

LINEO2001

- Mandatory
- Optional
- Not offered in 2024-2025
- Not offered in 2024-2025 but offered the following year
- Offered in 2024-2025 but not the following year
- Not offered in 2024-2025 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...)

This option lasts 2 years and is integrated into more than 30 Masters programs in 9 faculties/schools of the UCLouvain. The choice of this option implies the realization of an interfaculty dissertation (in team) on a business creation project. Access is limited to students selected on the basis of a portfolio. More info. via https://uclouvain.be/en/study/ineo

Admission to this CPME option is subject to selection, please submit your application in due time https://uclouvain.be/fr/etudier/ineo/admission.html

Courses in this option cannot be taken individually outside of the option.

From 20 to 25credit(s)

Content:

				Year 1	Year 2
[redacted]	*Ce cours est obligatoire pour les étudiants qui n'ont pas de prérequis en gestion (les étudiants qui ont suivi la mineure en gestion, ou la mineure en esprit d'entreprendre sont dispensés de ce cours).*	Philippe Grégoire Olivier Vercruysse	[FR] [q2] [30h+15h] [5 Credits]	x	
LINEO2001	Théorie de l'entrepreneuriat	Frank Janssen	[FR] [q1] [30h+20h] [5 Credits]	x	
LINEO2002	Aspects juridiques, économiques et managériaux de la création d'entreprise	Yves De Cordt Marine Falize	[FR] [q1] [30h+15h] [5 Credits]	x	

- Mandatory
- Optional
- Not offered in 2024-2025
- Not offered in 2024-2025 but offered the following year
- Offered in 2024-2025 but not the following year
- Not offered in 2024-2025 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...)

Optional LMAT1101	Mathematics 1	Pedro Dos Santos Santana Forte Vaz	FR [q1] [30h+20h] [4 Credits]
Optional LMAT1102	Mathematics 2	Augusto Ponce	FR [q2] [30h+30h] [4 Credits]
Optional LCHM1252	Elements of physical molecular chemistry	Marc de Wergifosse	FR [q2] [45h+22.5h] [6 Credits]
Optional LCHM1331	Inorganic chemistry I		

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.

CHIM2M - 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

Specific access requirements

Since this program is taught in English, no prior proof of French language proficiency is required, except for students wishing to access the didactic program who must provide proof of a CEFR level C1 proficiency.

If the candidate lacks any prerequisites, additional refresher courses may be required. These will be taught in French. If there is no proof of sufficient knowledge of French, the application will not be considered

Students who wish to be admitted on the basis of a dossier (see tables below) are invited to consult the criteria for the evaluation of application.

University Bachelors

Diploma	Special Requirements	Access	Remarks
UCLouvain Bachelors			
Bachelor in Chemistry		Direct access	
Bachelor in Biology	S'il à suivi la Mineure en sciences chimiques	Access with additional training	In some cases, the UCLouvain Enrolment Office, after reviewing their online enrolment or re-enrolment application, will ask the students concerned to provide an enrolment authorisation from the faculty/ school.
Bachelor in Bioengineering		Access based on application	
Others Bachelors of the French speaking Community of Belgium			
		Direct access	
Bachelors of the Dutch speaking Community of Belgium			
		Access with additional training	
Foreign Bachelors			
		Access based on application	

Non university Bachelors

> Find out more about links to the university

Diploma	Access	Remarks
BA en chimie, orientation biochimie - crédits supplémentaires entre 45 et 60 BA en chimie, orientation biotechnologie - crédits supplémentaires entre 45 et 60 BA en chimie, orientation chimie appliquée - crédits supplémentaires entre 45 et 60 BA en chimie, orientation environnement - crédits supplémentaires entre 45 et 60	Les enseignements supplémentaires éventuels peuvent être consultés dans	

Specific professional rules

Successful completion of the master's course with **teaching focus** leads to the award of the master's degree with teaching focus and the title of secondary school education specialist.

The Réforme des Titres et Fonctions ("Titles and Functions Reform"), in force since 1 September 2016, is intended to harmonise the titles, functions and pay scales of basic and secondary education professionals in French Community of Belgium networks.

It also aims to guarantee the priority of preferred titles over minimum titles and to establish a regime for titles in short supply.

AESS holders can learn which functions they can carry out and the pay scales from which they can benefit by clicking here.

The university cannot be held responsible for any problems that students may encounter at a later date with a view to a teaching appointment in the French Community of Belgium.

Teaching method

The program has been built as to

- maintain a reasonable volume of activities, compatible with the realization of a master thesis and a research training that properly prepares for the doctorate.
- promote interdisciplinarity (integrated practical works) and develop scientific communication skills (bibliographic research, presentation of seminars in French and English).

Students of the Didactic Finality may pursue a didactic deepening in biological, mathematical, physical or geographic sciences. For this specialization a in depth knowledge of the French language is required.

Evaluation

The evaluation methods comply with the regulations concerning studies and exams. More detailed explanation of the modalities specific to each learning unit are available on their description sheets under the heading "Learning outcomes evaluation method".

The student will be evaluated mainly on the basis of his or her personal work (reading, consulting bibliographic databases and references, writing reports, presenting seminars, dissertation, internship, etc.).

The student will also be assessed on his capacity to assimilate the various courses. Where possible, evaluation will be continuous, including regular "open book" tests. The evaluation of the thesis will be done in two stages: during a progress report meeting and during the final presentation.

In order to obtain the average note, the grades obtained for the teaching units are weighted by their respective credit value.

If a student enrolled in a January examination has not been able to present the examination for duly justified reasons ("force majeure"), he may apply to the President of the Jury for permission to present the examination in June. The President of the Jury shall judge the relevance of the application and, if the course holder agrees, may authorize the student to present the examination in June.

Mobility and/or Internationalisation outlook

Two mobility schemes (30 credits) are provided for in the Master's in-depth program:

- Erasmus-Socrates or Mercator research internship outside Belgium, or internship in another Belgian institution, including courses or practical work (according to agreements to be negotiated with the host institution)
- An internship (15 credits) in a UCLouvain laboratory different from the one where the thesis will be carried out, and practical work complements to familiarize the student with the main techniques in the different orientations of chemistry (15 credits, 180 hours, or 4.5 weeks).

In the specialised master's program, the same principle of mobility of 30 or 15 credits will be possible, with a preference for an internship in an industrial company, Belgian or foreign.

The mobility is ideally performed in the 2nd term of the 1st year. Master thesis and complementary training are the focus of the 2nd year of the master degree.

The list of destinations as well as the arrangements for organizing international mobility are available at https://uclouvain.be/fr/facultes/sc/programmes-d-echange-d-etudiants.html