

At Louvain-la-Neuve - 120 credits - 2 years - Day schedule - In English

Dissertation/Graduation Project : **YES** - Internship : **optional**

Activities in English: **YES** - Activities in other languages : **optional**

Activities on other sites : **optional**

Main study domain : **Sciences de l'ingénieur et technologie**

Organized by: **Louvain School of Engineering (EPL)**

Programme acronym: **MECA2M** - Francophone Certification Framework: 7

Table of contents

[Introduction](#)

MECA2M - Introduction

Introduction

Introduction

This program trains students various fields of mechanical engineering: fluid mechanics, analytical and computational applied mechanics,

5.6 Give convincing oral presentations using appropriate communication techniques.

Display rigour, openness, and critical thinking. Be able to adopt the appropriate global point of view to validate the socio-technical relevance of a hypothesis or a solution, all the while drawing upon available technological and scientific innovations.

6.1 Apply standards and assure the robustness of a solution in the fields of mechanics and electricity.

				Year
				1 2
○ LMECA2840	Project in Mechanical Design II	Bruno Dehez Christophe Everarts (compensates Benoît Raucent) Renaud Ronsse	EN [q1+q2] [30h+30h] [6 Credits]  > <i>French-friendly</i>	

MAJORS FOR THE MASTER'S DEGREE IN MECHANICAL ENGINEERING

MAJOR IN AERONAUTICS

Open to all students of civil and mechanical engineering and electromechanical engineering, classes in this major review mechanical applications of aeronautics: aeronautic structures, vibrations, aerodynamics, dynamics of flight, etc. The learning process consists of advanced classes in the mechanics of fluids and solids, with particular attention paid to numerical methods. This major is complemented by majors in Energy, Dynamics, Robotics and Biomechanics as well as Design, Manufacturing and Materials Mechanics (regarding

MAJOR IN DYNAMICS, ROBOTIC AND BIOMECHANICS

Open to all students of civil and mechanical engineering and electromechanical engineering, classes in this major review dynamics, robotics as well as biomechanics. Whether it be an analysis of vibrations, adjustment of a robot or the design and production of components or micro-components in bioengineering (for example, artificial Implants, valves and prosthetics), this major allows students to address one or more applications from a mechanics perspective. This major is complemented by the majors in Aeronautics, Energy as well as Design, Manufacturing and Materials Mechanics especially for students interested in problems related to dynamics and robotics in aeronautics and energy. The design and the choice of materials is crucial whether it be for the adjustment of a robot or the selection of bio-materials in rehabilitation projects.

- 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 \(objectives, methods, evaluation...\)](#)

From 20 to 30credit(s)

MAJOR IN ENERGY

Classes in this major review the subject of energy in the real world. This subject is addressed in its entirety first by the study of production techniques and energy conversion (thermal machines, nuclear energy, renewable energy) followed by an analysis of the risks associated with energy production and the means of minimising these risks (major risks, pollution) and finally a study of energy consumption and its consequences. This major is complemented by the major in Aeronautics for those students interested in problems of energy and motorisation in aeronautics. This is also the case for the major in Dynamics, Robotics and Biomechanics as well as the

MAJOR IN NUCLEAR ENGINEERING

As with the Master's in civil electromechanical engineering with a specialization in energy as well as the Master's in civil and mechanical engineering, the goal of this major is to offer an in-depth education in the principal aspects of nuclear engineering. Entry into this

MAJOR IN DESIGN, MANUFACTURING AND MECHANICS OF MATERIALS

Open to civil, mechanical and electromechanical engineering students, this major reviews design, manufacturing and the importance of materials in the development of a mechanical system. It also addresses physical and chemical properties and the behaviour of metals, polymers and composites. Next, the main techniques for shaping these materials (moulding by injection or compression, stretching, laminating, forging, extrusion, embossing) are studied from the thermo-mechanical and technological point of view. Finally, numerical modelling of these procedures is tackled with particular attention paid to welding techniques. All phases of the mechanical manufacturing process are studied from the design stage to the setting up of suitable manufacturing techniques to the production schedule and organisation of working groups. This major is rounded out by those in aeronautics and energy as well as dynamics, robotics and biomechanics for students interested in issues pertaining to design, manufacturing and the importance of materials be they in aeronautics, energy, transportation or bio-engineering.

- 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...)

From 20 to 30credit(s)

Year

1 2

Content:

Course Code	Course Title	Instructors	Language	Duration	Credits	Open to incoming exchange students	Year 1	Year 2
⊗ LMAPR2483	Durability of materials	Laurent Delannay Thomas Pardoën	EN	[q2] [30h+22.5h]	[5 Credits]	🌐	X	X
⊗ LMECA2453	Advanced manufacturing technologies	Aude Simar	EN	[q1] [30h+30h]	[5 Credits]	🌐	X	X
⊗ LMECA2520	Calculation of planar structures	Issam Doghri	EN	[q2] [30h+30h]	[5 Credits]	🌐	X	X
⊗ LMECA2640	Mechanics of composite materials	Issam Doghri	EN	[q2] [30h+30h]	[5 Credits]	🌐	X	X
⊗ LMECA2860	Welding Science and Technology	Pascal Jacques Aude Simar	EN	[q1] [30h+30h]	[5 Credits]	🌐	X	X
⊗ LMECA2711	Quality management and control.	Alexandre Debatty Laurence Guiot (coord.)	EN	[q2] [30h+30h]	[5 Credits]	🌐	X	X
⊗ LMAPR2020	Materials Selection	Pierre Bollen Bernard Nysten	EN	[q2] [30h+22.5h]	[5 Credits]	🌐	X	X
⊗ LMAPR2018	Rheology	Evelyne Van Ruymbeke	EN	[q2] [30h+30h]	[5 Credits]	🌐	X	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 \(objectives, methods, evaluation...\)](#)

Year

Year

1 2

⌘ Cours en marketing

⌘ MGEST1108	Marketing	Nadia Sinigaglia	FR [q2] [45h+20h] [6 Credits] 	x	x
⌘ MLSMM2136	Trends in Digital Marketing	Ingrid Poncin	FR [q2] [30h] [5 Credits] 		x
⌘ MLSMM2134	e-Consumer Behavior	Karine Charry	FR [q2] [30h] [5 Credits] 		x

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>.

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 accessible en anglais et ne peut être prise simultanément avec l'option « Enjeux de l'entreprise ».

- 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

o Content:

o Required courses

○ 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	
○ LINEO2003	Plan d'affaires et étapes-clefs de la création d'entreprise <i>Les séances du cours LINEO2003 sont réparties sur les deux blocs annuels du master. L'étudiant doit les suivre dès le bloc annuel 1, mais ne pourra inscrire le cours que dans son programme de bloc annuel 2.</i>	Frank Janssen	FR [q2] [30h+15h] [5 Credits] 🌐		X
○ LINEO2004	Séminaire d'approfondissement en entrepreneuriat	Frank Janssen	FR [q2] [30h+15h] [5 Credits] 🌐	X	

⊗ Prerequisite courses

Student who have not taken management courses during their previous studies must enroll in LINEO2021.

○ LINEO2021	Financer son projet	Philippe Grégoire Olivier Vercruysse	FR [q2] [30h+15h] [5 Credits] 🌐	X	
-------------	---------------------	---	---------------------------------	---	--

				Year	
				1	2
⊗ LESPA2600	Vocational Induction Seminar - Spanish (B2.2/C1)	Paula Lorente Fernandez (coord.)	ES [q1] [30h] [3 Credits] 🌐	x	x
⊗ LESPA2601	Vocational Induction Seminar - Spanish (B2.2/C1)	Paula Lorente Fernandez (coord.)	ES [q1] [45h] [5 Credits] 🌐	x	x
⊗ LNEER2500	Seminar of Entry to professional life in Dutch - Intermediate level	Isabelle Demeulenaere (coord.)	NI [q1 or q2] [30h] [3 Credits] 🌐	x	x
⊗ LNEER2600	Seminar of entry to professional life in Dutch - Upper-Intermediate level	Isabelle Demeulenaere (coord.) Dag Houdmont	NI [q1 or q2] [30h] [3 Credits] 🌐	x	x

⊗ **Group dynamics**

⊗ LEPL2351	Become a tutor	Jean-Charles Delvenne (coord.) Delphine Ducarme Thomas Pardoën Benoît Raucent	SI [q1] [15h+30h] [3 Credits] 🌐	x	x
⊗ LEPL2352	Become a tutor	Jean-Charles Delvenne (coord.) Delphine Ducarme Thomas Pardoën (compensates Benoît Raucent)	SI [q2] [15h+30h] [3 Credits] 🌐	x	x

⊗ **Autres UEs hors-EPL**

L'étudiant-e peut choisir maximum 8 crédits de cours hors EPL, considérés comme non-disciplinaires par la commission de programme.

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 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.



Bachelor in Engineering	For others institutions	Access based on application	degree may have an adapted master programme. See personalized access
-------------------------	-------------------------	-----------------------------	---

Non university Bachelors

> Find out more about [links](#) to the university

Holders of a 2nd cycle University degree

Diploma	Special Requirements	Access	Remarks
"Licenciés"			

Masters

Master in Engineering	Direct access
-----------------------	---------------

Holders of a non-University 2nd cycle degree

Access based on validation of professional experience

> It is possible, under certain conditions, to use one's personal and professional experience to enter a university course without having the required qualifications. However, validation of prior experience does not automatically apply to all courses. Find out more about [Validation of priori experience](#).

Access based on application

Access based on application : access may be granted either directly or on the condition of completing additional courses of a maximum of 60 ECTS credits, or refused.

The first step of the admission procedure requires to submit an application online: <https://uclouvain.be/en/study/inscriptions/futurs-etudiants.html>

[Selection criteria are summarized here](#) (containing information on the selection criteria). However, validation of prior experience is not applicable to all courses. Selection criteria are summarized here.

For more information on evaluation methods, students may consult the relevant evaluation descriptions.

To obtain a passing grade, the marks received for the teaching units are offset by their respective credits.

Mobility and/or Internationalisation outlook

Over the years, EPL has developed over a hundred partnerships with partners in more than 36 countries (EU and non-EU) to offer exchange programmes to its students. We also offer the possibility of obtaining Double degrees, Joint Degrees or Dual Masters in several fields. The EPL is currently participating in two Erasmus Mundus programmes: [FAME](#) and [STRAINS](#).

In addition to exchange programmes under the Erasmus+ programme, numerous agreements have been established with a wide range of universities through various partner networks such as:

- [TIME](#) network (Top Industrial Managers in Europe).
- [CLUSTER](#) network
- [Magalhães](#) network
- [Circle U](#). network through several networks and European University Alliance

So, there's no shortage of opportunities to gain an additional qualification and/or spend part of the year abroad during your two-year Master's degree! It's the perfect opportunity to discover or improve your knowledge of a foreign language, tackle subjects from a new angle and gain unique experience in Europe or the rest of the world.

If you would like more information, please visit the dedicated pages of the [EPL International Office](#) to discover all the destinations, testimonials from former students and all the procedures to follow to make these opportunities a success.

Louvain School of Engineering takes part in the [TFM-ASA Master Program](#). The TFM-ASA Master Program is a two-year Master of Science Program taught in English by 3 Universities in 3 different countries ([Catholic University of Louvain](#) (Belgium) , [Brandenburg University of Technology](#) (Germany) and [University of Bordeaux](#) (France)).

The students will benefit from top quality training in Mechanical and Aerospace Engineering. They will spend an entire semester in each university. Many industrial partners are directly involved through internships for students, conferences and even courses.

Louvain School of Engineering takes part in The Erasmus Mundus Joint Master Degree [STRAINS](#). STRAINS is a 2-year master programme of excellence in English for students wishing to develop their knowledge and skills in the field of solid mechanics for the modeling of materials and structures.

It was built by a consortium of six acknowledged European Universities and associated partners. The disciplinary opening is given by the student mobility. The programme leads to the award of a recognized joint diploma. The master is aimed to give thorough theoretical, experimental and numerical tools for solving advanced engineering problems, especially emphasizing the dialogue between these three aspects.

and aSartners. The disc3m61.9039917 236.763000 0.9illh8).

