UCLouvain

ELME2M

2025 - 2026

Master [120] in Electro-mechanical Engineering

The version you're consulting is not definitive. This programme still may change. The final version will be published on 1th June.

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: **ELME2M** - Francophone Certification Framework: 7

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ELME2M - Introduction

Introduction

Introduction

The Master's degree programme in electro-mechanical engineering draws equally from two fields (mechanics and electricity) and prioritises basic knowledge with the goal of deepening or reorienting students' knowledge mid-career.

By the end of the programme, students will be able to keep up with technical developments and adapt themselves to the needs of the job market.

Your profile

You

- Have solid knowledge of electricity and mechanics;
- Want to improve your understanding of current technological and scientific issues;
- Want to design, model, realise and validate experimental devices and systems;
- Want to specialise in mechatronics or in energy and foresee a career in robotics and "flexible production", energy transformation and management, vehicles and transportation systems and/or aeronautics.

Your programme

This Master's degree offers:

- General knowledge of electro-mechanics based on research;
- The mastery of mathematical and physical methods used in electricity and mechanics;
- An interdisciplinary approach to problem solving with particular emphasis placed on interface problems;
- Pedagogy centred on project-based learning;
- The possibility of testing your knowledge in the job market thanks to internships in the industrial sector

Majors: Mechatronics; Energy

ELME2M - Teaching profile

Learning outcomes

Integrating the fields of mechanics and electricity is one of the major challenges of the civil engineering student in electro-mechanics.

The Master's degree in Electro-mechanical engineering from UCLouvain favours multidisciplinary training and the ability to solve interface problems raised by the integration of several fields. It integrates the fields of electricity and mechanics into a coherent whole and prioritises basic knowledge with the aim of deepening or reorienting students' knowledge mid-career.

Students will acquire the knowledge and skills necessary to become:

- Specialists in mechatronics (electronics, mechanical production, automation and robotics) or specialists in energy (smart grids/ energy networks, thermodynamics and energy).
- Individuals with field experience capable of putting into practice their knowledge of research and technology.
- Managers who can manage team projects

The Master's degree programme in electro-mechanical engineering prepares its students to be aware of technical progress and adapt to the needs of the job market and changes in business.

Polytechnic and multidisciplinary, the training provided by the Louvain School of Engineering privileges the acquisition of knowledge that combines theory and practice and that is open to analysis, design, manufacturing, production, research and development and innovation all the while paying attention to ethics and sustainable development.

On successful completion of this programme, each student is able to :

1.Demonstrate mastery of a solid body of knowledge in basic science and engineering science allowing the student to learn and solve problems pertaining to electro-mechanics. (Axis 1)

1. 1. Identify and use concepts, laws and appropriate reasoning from a variety of fields in mechanics and electricity to solve a given problem:

- Electricity (in the broad sense)
- Electro-technics (conversion, controls, activation)
- Electronics (digital electronics, instrumentation, sensors)
- Automation
- Computer sciences (real time)
- Mechanics (modeling, design)
- Robotics and automation.

1. 2. Identify and use modelling and calculation tools to solve problems associated with the aforementioned fields.

1. 3. Verify problem solving results especially with regard to orders of magnitude and/or units (in which the results are expressed).

2.Organize and carry out an applied engineering process to develop a product and/or service responding to a particular need or problem in the field of electro-mechanics. (Axis 2)

2.1. Analyse a problem, take stock of features and constraints, and formulate specifications in a field where the technical and economic limits are taken into account

2.2. Model a problem and design one or more technical solutions (drawing on the fields of mechanics, electrics, electronics, electro-technics or information technology) and respond to problem specifications.
2.3. Evaluate and classify solutions with regards to all the specification criteria: efficiency, feasibility, ergonomic quality and environmental security (for example: too expensive, too complex, too dangerous, too difficult to manipulate).
2.4. Test a solution using a mock up, a prototype or a numerical model.
2.5. Formulate recommendations to improve a technical solution.

3.Organise and carryout a research project to learn about a physical phenomenon or a new problem relating to the field of electro-mechanics. (Axis 3)

3.1. Document and summarise the existing body of knowledge in the field of mechanics and electricity

3.2. Suggest an experimental model or device by first constructing a mathematical model, then by using laboratories to create a device simulates system behaviour and tests relevant hypotheses.
3.3. Synthesize conclusions in a report that shows the key parameters and their influence on the behaviour of the phenomenon under study (choice of forms and materials, physio-chemical environment, conditions for use).

4.Contribute, through teamwork, to a multidisciplinary project and carry out the project while taking into account its objectives, resources, and constraints. (Axis 4)

4.1. Frame and explain the project's objectives taking into account the issues, constraints and domain interfaces that characterise the project's environment.
4.2. Collaborate with peers on a multidisciplinary topic (mechanics and electricity) to create a work schedule (and resolve any resulting conflicts).
4.3. Make team decisions to successfully complete the project whether they be about technical solutions of the division of labour.

5.Communicate effectively (speaking or writing in French or a foreign language) with the goal of carrying out assigned projects. (Axis 5)

5.1. Identify the clients' needs: question, listen and ensure the understanding of all the dimensions of the request and not just the technical aspects.
5.2. Present your arguments and convince your interlocutors (technicians, colleagues, clients, superiors) by adopting their language.
5.3. Communicate through graphics and diagrams: interpret a diagram, present work results, structure information.
5.4. Read and analyse different technical documents related to the profession (standards, drawings, specifications).
5.5. Draft written documents that take into account contextual requirements and social conventions.
5.6. Use modern communication techniques to give convincing oral presentations.

6.Display rigour, openness, and critical thinking; validate the socio-technical relevance of a hypothesis or a solution, all the while drawing upon available technological and scientific innovations. (Axis 6)

6.1. Apply standards and assure the robustness of a solution in the fields of mechanics and electricity.
6.2. Put solutions into perspective by including non-technical concerns (for example, in the area of energy and climate, take environmental and social factors into consideration).
6.3. Demonstrate critical thinking vis-à-vis technical solutions or methodological approach regarding the involved actors.
6.4. Evaluate one's own work.

Programme structure

The student's programme includes:

- A common core curriculum (57 credits)
- A final specialisation (30 credits)
- One of more of the major courses or elective courses listed below.

The graduation project is normally completed in the second year. However, students may, depending on the nature of their project, choose to take their classes in the first or second year so long as their course prerequisites allow it. This is particularly the case for students completing part of their program abroad.

If during the student's previous studies, he or she has already taken a course that is part of the programme (either required or elective) or they have participated in an academic activity that is approved by the programme commission, the student may count this activity toward their graduation requirements (but only if they respect programme rules). The student will also verify that he/she has obtained the minimum number of credits requested for the approval of their diploma as well as for the approval of their major (in order to include their academic distinctions in the diploma supplement).

These types of programmes will be submitted for approval by the relevant Master's degree programme commission.

ELME2M Programme

Detailed programme by subject

CORE COURSES

Mandatory
Optional
Not offered in 2025-2026
Not offered in 2025-2026 but offered the following year
Offered in 2025-2026 but not the following year
Not offered in 2025-2026 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
LELME2990	Graduation project/End of studies project *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.*		EN [q1+q2] [] [25 Credits] *> French-friendly*		x
LINMA1510	Linear Control	Gianluca Bianchin	EN [q1] [30h+30h] [5 Credits] *> French-friendly*	x	x

Electricity and electronics courses

LELEC2660	Power electronics	Marc Bekemans	EN [q2] [30h+15h] [5 Credits] *> French-friendly*	x	x
LELEC2811	Instrumentation and sensors	David Bol Laurent Francis	EN [q1] [30h+30h] [5 Credits] *> French-friendly*	x	x
LELME2313	Dynamic modelling and control of electromechanical converters	Emmanuel De Jaeger Bruno Dehez	EN [q1] [30h+30h] [5 Credits] *> French-friendly*	x	x

Project

LELME2002	Project in mechatronics		EN [q1+q2] [30h+45h] [10 Credits] *> French-friendly*	x	x

PROFESSIONAL FOCUS : MECATRONICS [30.0]

- Mandatory
- Optional
- Not offered in 2025-2026
- Not offered in 2025-2026 but offered the following year
- Offered in 2025-2026 but not the following year
- Not offered in 2025-2026 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...)

Content:

Pour LINFO1361, une alternative peut être proposée pour les non-speaking French students (as Machine Learning course).

				Year 1	Year 2
LELME2311	Physics of Electromechanical Converters	Bruno Dehez	EN [q2] [30h+30h] [5 Credits] > French-friendly	x	x
LELEC2531	Digital electronic systems	Martin Andraud	EN [q1] [30h+30h] [5 Credits] > French-friendly	x	x
LMECA2755	Industrial automation	Bruno Dehez Paul Fisette Renaud Ronsse	EN [q1] [30h+30h] [5 Credits] > French-friendly	x	x
LMECA2801	Machine design	Benoît Raucent	EN [q1] [30h+30h] [5 Credits] > French-friendly	x	x
LINFO1361	Artificial intelligence	Yves Deville	FR [q2] [30h+30h] [5 Credits]	x	x
LELME2732	Robot modelling and control	Renaud Ronsse	EN [q2] [30h+30h] [5 Credits] > French-friendly	x	x

OPTIONS

L'étudiant·e complète son programme avec des options et/ou des cours au choix pour arriver à min. 90 crédits disciplinaires. Il n'est pas obligatoire de valider une option.
In the "Options and elective courses in socio-economic knowledge" section, the student validates one of the two options or must choose at least 6 credits from the courses in the option in business issues (maximum one class of innovation may be chosen, maximum one course among those offered by the CPs may be taken into account in these 6 credits).

Options du master ingénieur civil électromécanicien

- > Major in circuits and electronic systems *[en-prog-2025-elme2m-lelme227o]*
- > Major in Systems and control engineering *[en-prog-2025-elme2m-lelme230o]*
- > Major in dynamics, robotics and biomechanics *[en-prog-2025-elme2m-lelme223o]*
- > Major in design, manufacturing and mechanics of materials *[en-prog-2025-elme2m-lelme241o]*
- > Major in aeronautics *[en-prog-2025-elme2m-lelme240o]*
- > Major in nuclear engineering *[en-prog-2025-elme2m-lelme237o]*
- > Cours au choix disciplinaires *[en-prog-2025-elme2m-lelme238o]*

Options et cours au choix en connaissances socio-économiques

- > Business risks and opportunities *[en-prog-2025-elme2m-lelme232o]*
- > Major in Interdisciplinary Program in Entrepreneurship - INEO *[en-prog-2025-elme2m-lelme233o]*

Others elective courses

- > Others elective courses *[en-prog-2025-elme2m-lelme231o]*

OPTIONS DU MASTER INGÉNIEUR CIVIL ÉLECTROMÉCANICIEN

MAJOR IN CIRCUITS AND ELECTRONIC SYSTEMS

The goal of this major (which it shares with Master's degree programs in electricity and electro-mechanics) is to introduce students to system design techniques, computer aided simulation, manufacturing and experimental characterisation of components and circuits (both analogue and numerical) as well as mixed systems. Emphasis is placed on practical applications and the completion of projects.

- Mandatory
- Optional
- Not offered in 2025-2026
- Not offered in 2025-2026 but offered the following year
- Offered in 2025-2026 but not the following year
- Not offered in 2025-2026 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...)

The student may select 15 to 30 credits from the following courses:

From 15 to 30credit(s)

Content:

Compulsory course in electronic circuits and systems

				Year 1	Year 2
LELEC2532	Analog electronic systems	David Bol Denis Flandre (coord.)	EN [q2] [30h+30h] [5 Credits] > *French-friendly*	x	x

Elective courses in electronic circuits and systems

LELEC2541	Advanced Transistors	Denis Flandre Benoît Hackens Jean-Pierre Raskin	EN [q2] [30h+22.5h] [5 Credits] > *French-friendly*	x	x
LELEC2570	Synthesis of digital integrated circuits		EN [q1] [30h+30h] [5 Credits] > *French-friendly*	x	x
LELEC2580	Design of RF and microwave communication circuits	Dimitri Lederer	EN [q2] [30h+30h] [5 Credits] > *French-friendly*	x	x
LELEC2590	Seminars in electronics and communications	Denis Flandre Isabelle Huynen Jérôme Louveaux	EN [q2] [30h] [3 Credits] > *French-friendly*	x	x
LELEC2620	Modeling and implementation of analog and mixed analog/ digital circuits and systems on chip	David Bol	EN [q2] [30h+22.5h] [5 Credits] > *French-friendly*	x	x
LELEC2650	Synthesis of analog integrated circuits		EN [q1] [30h+30h] [5 Credits] > *French-friendly*	x	x
LELEC2660	Power electronics	Marc Bekemans	EN [q2] [30h+15h] [5 Credits] > *French-friendly*	x	x
LELEC2700	Microwaves	Dimitri Lederer	EN [q1] [30h+30h] [5 Credits] > *French-friendly*	x	x
LELEC2760	Secure electronic circuits and systems	François-Xavier Standaert	EN [q2] [30h+30h] [5 Credits] > *French-friendly*	x	x
LELEC2811	Instrumentation and sensors	David Bol Laurent Francis	EN [q1] [30h+30h] [5 Credits] > *French-friendly*	x	x
LGBIO2020	Bioinstrumentation	André Mouraux Michel Verleysen	EN [q2] [30h+30h] [5 Credits] > *French-friendly*	x	x
LINFO2315	Design of Embedded and real-time systems		EN [q2] [30h+30h] [5 Credits] > *French-friendly*	x	x

MAJOR IN SYSTEMS AND CONTROL ENGINEERING

- Mandatory
- Optional
- Not offered in 2025-2026
- Not offered in 2025-2026 but offered the following year
- Offered in 2025-2026 but not the following year
- Not offered in 2025-2026 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...)

The student may select:
From 15 to 30credit(s)

Content:

				Year 1	Year 2
LGBIO2060	Modelling of biological systems	Philippe Lefèvre	EN [q1] [30h+30h] [5 Credits] > French-friendly	x	x
LINMA2361	Nonlinear dynamical systems	Pierre-Antoine Absil Estelle Massart	EN [q1] [30h+22.5h] [5 Credits] > French-friendly	x	x
LINMA2671	Advanced control and applications	Julien Hendrickx	EN [q1] [30h+30h] [5 Credits] > French-friendly	x	x
LINMA2875	System Identification	Gianluca Bianchin	EN [q2] [30h+30h] [5 Credits] > French-friendly	x	x
LINMA2510	Mathematical ecology		EN [q2] [30h+22.5h] [5 Credits] > French-friendly	x	x

MAJOR IN DYNAMICS, ROBOTICS AND BIOMECHANICS

The goal of this major (which it shares with Master's degree programs in electricity and electro-mechanics) is to give students a complete education in this field. All phases of the mechanical manufacturing process are studied from the design stage to putting manufacturing techniques into place to production planning and the organisation of workshops. In addition, students will learn about important technological techniques (machine parts) as well as solid mechanics (elasticity and plasticity) in order to master the processing, behaviour and use of common materials. Finally, attention is paid to methods used in the fields of automation and robotics.

- Mandatory
- Optional
- Not offered in 2025-2026
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- Offered in 2025-2026 but not the following year
- Not offered in 2025-2026 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...)

The class LELME 2732 may not be taken as part of this major by ELME (mechatronics)students. Students majoring in this field may select:

From 20 to 30credit(s)

Content:

				Year 1	Year 2
LGBIO2040	Biomechanics	Greet Kerckhofs	EN [q2] [30h+30h] [5 Credits] > French-friendly	x	x
LGCIV2042	Dynamics of structures	João Saraiva Esteves Pacheco De Alm	EN [q1] [30h+15h] [5 Credits] > French-friendly	x	x
LMECA2170	Computational Geometry [M]	Vincent Legat Jean-François Remacle	EN [q1] [30h+30h] [5 Credits] > French-friendly	x	x
LMECA2215	Vehicle System Dynamics	Paul Fisette	EN [q1] [30h+30h] [5 Credits] > French-friendly	x	x

				Year 1	2
⊠ LMECA2355	Mechanical design in biomedical engineering	Greet Kerckhofs Benoît Raucent	EN [q1] [30h+30h] [5 Credits] > *French-friendly*	x	x
⊠ LELME2732	Robot modelling and control	Renaud Ronsse	EN [q2] [30h+30h] [5 Credits] > *French-friendly*	x	x
⊠ LMECA2802	Multibody system Dynamics		EN [q2] [30h+30h] [5 Credits] > *French-friendly*	x	x
⊠ LINMA2875	System Identification	Gianluca Bianchin	EN [q2] [30h+30h] [5 Credits] > *French-friendly*	x	x
⊠ LMECA2335	Biorobotics	Renaud Ronsse	EN [q2] [30h+30h] [5 Credits]	x	x

MAJOR IN DESIGN, MANUFACTURING AND MECHANICS OF MATERIALS

- Mandatory
- Optional
- Not offered in 2025-2026
- Not offered in 2025-2026 but offered the following year
- Offered in 2025-2026 but not the following year
- Not offered in 2025-2026 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...)

If the course LMECA1451 has not been taken during the bachelor, you must add it to your programme.
From 20 to 30credit(s)

Content:

				Year 1	Year 2
Optional LMAPR2483	Durability of materials		EN [q2] [30h+22.5h] [5 Credits] > French-friendly	x	x
Optional LMECA2453	Advanced manufacturing technologies	Aude Simar	EN [q1] [30h+30h] [5 Credits] > French-friendly	x	x
Optional LMECA2520	Calculation of planar structures	Issam Doghri	EN [q2] [30h+30h] [5 Credits] > French-friendly	x	x
Optional LMECA2640	Mechanics of composite materials	Issam Doghri	EN [q2] [30h+30h] [5 Credits] > French-friendly	x	x
Optional LMECA2860	Welding Science and Technology		EN [q1] [30h+30h] [5 Credits] > French-friendly	x	x
Optional LMECA2711	Quality management and control.		EN [q2] [30h+30h] [5 Credits] > French-friendly	x	x
Optional LMAPR2020	Materials Selection		EN [q2] [30h+22.5h] [5 Credits] > French-friendly	x	x
Optional LMAPR2018	Rheology		EN [q2] [30h+30h] [5 Credits] > French-friendly	x	x

MAJOR IN AERONAUTICS

Ouverte aux étudiant·es ingénieurs civils mécaniciens et électromécaniciens, cette option reprend des cours sur l'application de la mécanique à l'aéronautique : structures aéronautiques, vibrations, aérodynamique, dynamique du vol. Cet apprentissage se fait au travers de cours approfondis de mécanique des fluides et des solides, avec une attention particulière portée aux méthodes numériques.

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 programme, which is primarily overseen by the Mol Centre of Nuclear Energy, is contingent on an evaluation of candidates' skills based on the rules used for ERASMUS-SOCRATES exchange students. Further information about this major may be found on Mol's website SCK-CEN.

Commune aux masters ingénieur civil électromécanicien, finalité spécialisée énergie, et ingénieur civil mécanicien, cette option a pour objectif d'offrir une formation approfondie dans les principaux aspects du génie nucléaire. L'accès à cette option qui est organisée pour sa plus grand partie au Centre d'énergie nucléaire de Mol est conditionnée à une évaluation des compétences des candidats suivant les règles utilisées pour les candidatures aux échanges ERASMUS-SOCRATES. Plus de détails sur cette option sont disponibles sur le site du SCK-CEN de Mol.

COURS AU CHOIX DISCIPLINAIRES

- Mandatory
- Optional
- Not offered in 2025-2026
- Not offered in 2025-2026 but offered the following year
- Offered in 2025-2026 but not the following year
- Not offered in 2025-2026 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...)

Content:

				Year 1	Year 2
LELEC1930	Intoduction to telecommunication	Jérôme Louveaux	EN [q2] [30h+15h] [4 Credits]	x	x
LELEC2753	Electrical power systems: advanced topics and smart grids	Emmanuel De Jaeger	EN [q2] [30h+15h] [5 Credits] > French-friendly	x	x
LINFO2147	Communication networks		EN [q1] [30h+15h] [5 Credits] > French-friendly	x	x
LELEC2595	Electrical power systems dynamics and quality of supply	Emmanuel De Jaeger	EN [q2] [30h+30h] [5 Credits] > French-friendly	x	x
LENVI2007	Renewable energy sources	Emmanuel De Jaeger Patrick Gerin (coord.) Hervé Jeanmart	EN [q1] [45h+15h] [5 Credits] > French-friendly	x	x
LINMA2370	Modelling and analysis of dynamical systems	Jean-Charles Delvenne	EN [q1] [30h+22.5h] [5 Credits] > French-friendly	x	x
LMECA1451	Mechanical manufacturing.	Laurent Delannay Aude Simar	FR [q2] [30h+30h] [5 Credits]	x	x
LELME2240	Energy systems lab.		EN [q2] [30h+30h] [5 Credits] > French-friendly	x	x
LMECA2325	Biomass conversion	Patrick Gerin Hervé Jeanmart	EN [q1] [30h+30h] [5 Credits] > French-friendly	x	x
LMECA2410	Mechanics of Materials	Laurent Delannay Aude Simar	EN [q2] [30h+30h] [5 Credits] > French-friendly	x	x
LELME2420	Energetics.	Francesco Contino Hervé Jeanmart	EN [q2] [30h+15h] [5 Credits] > French-friendly	x	x
LMECA2645	Major technological hazards in industrial activity.		FR [q2] [30h] [3 Credits]	x	x
LMECA2771	Thermodynamics of irreversible phenomena.	Miltiadis Papalexandris	EN [q2] [30h+30h] [5 Credits] > French-friendly	x	x
LMECA2780	Introduction to Turbomachinery		EN [q2] [30h+30h] [5 Credits] > French-friendly	x	x
LMECA2801	Machine design	Benoît Raucent	EN [q1] [30h+30h] [5 Credits] > French-friendly	x	x
LELEC2520	Electrical power systems	Emmanuel De Jaeger	EN [q1] [30h+30h] [5 Credits] > French-friendly	x	x
LMECA2220	Internal combustion engines		EN [q2] [30h+30h] [5 Credits] > French-friendly	x	x

OPTIONS ET COURS AU CHOIX EN CONNAISSANCES SOCIO-ÉCONOMIQUES

BUSINESS RISKS AND OPPORTUNITIES

- Mandatory
- Optional
- Not offered in 2025-2026
- Not offered in 2025-2026 but offered the following year
- Offered in 2025-2026 but not the following year
- Not offered in 2025-2026 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...)

The student who wishes to validate this option must select at least 15 credits among the courses offered (maximum one course among those offered by the CPs can be taken into account in these 15 credits).

This option cannot be taken simultaneously with the "Interdisciplinary training in entrepreneurship - INEO" option.

Content:

Cours spécifiques aux enjeux de l'entreprise

				Year 1	Year 2
LFSA2995	Company Internship	Dimitri Lederer	FR [q1+q2] [30h] [10 Credits]	x	x
LEPL1805	People management [M] *This course cannot be chosen if it has already been validated in the bachelor's degree.*	Bauduin Auquier Philippe Henrotaux Renaud Ronsse	FR [q1] [30h+0h] [3 Credits]	x	x
LEPL2020	Professional integration work [M]		EN [q1+q2] [30h+0h] [3 Credits] *> French-friendly*		x
LEPL2210	Ethics and ICT *This course cannot be chosen if the LLSMS2280 course has already been validated.*	Axel Gosseries Olivier Pereira	EN [q2] [30h] [3 Credits] *> French-friendly*	x	x
LEPL2211	Introduction to new venture management [M]	Benoît Gailly	EN [q2] [30h] [3 Credits] *> French-friendly*	x	x
LEPL2214A	Law, Regulation and Legal Context - Law, regulation and legal context (partim A)		FR [q1] [30h+0h] [3 Credits]	x	x
LMECA2645	Major technological hazards in industrial activity.		FR [q2] [30h] [3 Credits]	x	x
LMECA2711	Quality management and control.		EN [q2] [30h+30h] [5 Credits] *> French-friendly*	x	x
LLSMS2036	Supply Chain Procurement	Per Joakim Agrell	EN [q1] [30h] [5 Credits]	x	x
LLSMS2280	Business Ethics and Compliance Management *Ce cours ne peut être choisi si le cours LEPL2210 a déjà été validé.*		EN [q1] [30h] [5 Credits]	x	x

Innovation classe

Maximum one innovation class can be chosen.

LEPL2021	Innovation classes for transition and sustainable development		EN [q1] [30h+15h] [5 Credits]	x	x
LEPL2022	Health Innovation Classes [C]		EN [q2] [30h+30h] [5 Credits] *> French-friendly*	x	x

Courses offered by the Program Commission

LINMA2415	Quantitative Energy Economics		EN [q2] [30h+22.5h] [5 Credits] *> French-friendly*	x	x
LLSMS2034	Supply Chain Planning	Mathieu Van Vyve	EN [q2] [30h] [5 Credits]	x	x
LSTAT2380	Statistical consulting		EN [q1+q2] [30h] [5 Credits] *> French-friendly*	x	x
LSTAT2390	Applied statistics workshops		EN [q1+q2] [15h] [3 Credits] *> French-friendly*	x	x

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'entreprenariat 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 2025-2026
- Not offered in 2025-2026 but offered the following year
- Offered in 2025-2026 but not the following year
- Not offered in 2025-2026 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...)

Content:

				Year 1	Year 2
Cours obligatoires:					
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	[FR] [q1] [30h+15h] [5 Credits]	x	
LINEO2003	Plan d'affaires et étapes-clefs de la création d'entreprise *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.*	Frank Janssen	[FR] [q2] [30h+15h] [5 Credits]		x
LINEO2004	Séminaire d'approfondissement en entrepreneuriat	Frank Janssen	[FR] [q2] [30h+15h] [5 Credits]	x	
Cours préalable:					
LINEO2021	Financer son projet		[FR] [q2] [30h+15h] [5 Credits]	x	

OTHERS ELECTIVE COURSES

OTHERS ELECTIVE COURSES

- Mandatory
- Optional
- Not offered in 2025-2026
- Not offered in 2025-2026 but offered the following year
- Offered in 2025-2026 but not the following year
- Not offered in 2025-2026 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...)

Content:

Les étudiant·es peuvent également inscrire à leur programme tout cours faisant partie des programmes d'autres masters de l'EPL moyennant l'approbation du jury restreint.

Languages

Students may select from any language course offered at the ILV. Special attention is placed on the following seminars in professional development:

				Year 1	Year 2
LALLE2500	Professional development seminar German	Caroline Klein (coord.)	DE [q1+q2] [30h] [3 Credits]	x	x
LALLE2501	Professional development seminar-German	Caroline Klein (coord.)	DE [q1+q2] [30h] [5 Credits]	x	x
LESPA2600	Vocational Induction Seminar - Spanish (B2.2/C1) [M]	Paula Lorente Fernandez (coord.)	ES [q1] [45h] [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.)	NL [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	NL [q1 or q2] [30h] [3 Credits]	x	x

Group dynamics

LEPL2351	Become a tutor		FR [q1] [15h+30h] [3 Credits]	x	x
LEPL2352	Become a tutor		FR [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 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.

ELME2M - 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

This programme is taught in English with no prerequisite in French. A certificate is required for the holders of a non-Belgian degree, see selection criteria of the Access on the file.

University Bachelors

Diploma	Special Requirements	Access	Remarks
UCLouvain Bachelors			
Bachelor in Engineering		Direct access	Students who have neither major nor minor in the field of their civil engineering Master's degree may have an adapted master programme.
Others Bachelors of the French speaking Community of Belgium			
Bachelor in Engineering		Direct access	Students with a Bachelor's degree in engineering sciences who have not taken the equivalent of a minor in the field of their civil enginering master degree may have an adapted master programme.
Bachelors of the Dutch speaking Community of Belgium			
Bachelor in engineering		Access with additional training	Students who have no specialisation in the field of their civil engenering master degree may have an adapted master programme with up to 60 additional credits.
Foreign Bachelors			
Bachelor in engineering	Bachelor degree of Cluster Institution	Direct access	Students with a Bachelor's degree in engineering sciences who have not taken the equivalent of a minor in the field of their civil enginering master

			degree may have an adapted master programme.
Bachelor in Engineering	For others institutions	Access based on application	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	
Masters in engineering	Direct access

Holders of a non-University 2nd cycle degree

> Find out more about links to the university

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: www.uclouvain.be/en/study/inscriptions/futurs-etudiants.html.

Selection criteria are summarized here (contact : epl-admission@uclouvain.be).

Admission and Enrolment Procedures for general registration

Teaching method

The majority of classes consist of lectures and tutorials. The tutors are upper-class students who have specialised tutor training (the class LEPL2351). This class provides its participants with practical tutoring techniques to help fellow students.

Methods that promote multidisciplinary studies

UCLouvain's Master's degree programme in electro-mechanics is by nature multidisciplinary because it combines classes in electricity, mechanics, automation and computer sciences. It also includes non-engineering elective classes such as economics, management and languages.

Various teaching strategies

Through a pedagogy that prioritises projects that integrate several subjects, students gain critical thinking skills, which in turn allows them to design, model, and create electro-mechanic prototypes and systems.

In the last year of the programme, half of the time is devoted to the graduation project, which offers students the possibility of working as part of a research team or collaborating with the industrial sector to study a given subject in-depth. It provides an introduction to the actual working life of an engineer or researcher (thanks to the size of the project and the context within which it is carried out).

Diverse learning situations

Various pedagogical approaches are used: lectures, projects, exercise sessions, problem solving sessions, case studies, experimental laboratories, computer simulations, educational software, internships in industry or research, factory visits, seminars and group as well as individual work. In certain subjects, eLearning allows students to learn at their own pace and carry out virtual experiments.

These diverse learning situations permit students to build their knowledge in an iterative and progressive manner all the while developing their independence, organisational and time management skills as well as their ability to communicate. Students have access to the newest information technology (materials, software, networks) during their studies.

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".

Student work is evaluated according to University rules (see the rules for evaluating coursework and exams) namely written and oral exams, laboratory reports, individual or group work, public presentations of projects and theses defences.

ELME Evaluation Methods :

Learning outcomes	Certificate-based evaluation
Demonstrate mastery of a solid body of knowledge in basic science and engineering science allowing the student to learn and solve problems pertaining to electro-mechanics (axis 1) *Organize and carry out an applied engineering process to develop a product and/or service responding to a particular need or problem in the field of electro-mechanics. (Axis 2)*	• End of the semester exam based on course exercises • Tests in some introductory classes
Organise and carryout a research project to learn about a physical phenomenon or a new problem relating to the field of electro-mechanics. (Axis 3)	• Report on mini project in field of study • Progress report on multidisciplinary project
Contribute, through teamwork, to a multidisciplinary project and carry out the project while taking into account its objectives, resources, and constraints. (Axis 4) *Communicate effectively (speaking or writing in French or a foreign language) with the goal of carrying out assigned projects. (Axis 5)* *Display rigour, openness, and critical thinking; validate the socio-technical relevance of a hypothesis or a solution, all the while drawing upon available technological and scientific innovations. (Axis 6)*	• Progress report on multidisciplinary project • Report, public presentation, and yearly work for graduation project

In certain instances, teaching is done through multidisciplinary project, the Learning by Problem Solving method (Apprentissage par problèmes or APP), flipped classes or seminars.

The certificate-based evaluation are coherent with the teachnig methods and the learning outcomes.

The formative evaluation is achieved in part during the projects via tutor feedback and above all during the graduation project.

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

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.

Possible trainings at the end of the programme

Specialised Master's Degrees

- Advanced Master in Nanotechnologies
- Advanced Master in Nuclear Engineering
- Specialised Master's Degree in Biotechnology and Applied Biology

Doctoral Programmes

Most doctoral students study at the Institute of Information and Communication Technologies, Electronics and Applied Mathematics as well as the Institute of Mechanics, Materials and Civil Engineering. The faculty of these Institutes participate in numerous doctoral programmes. A comprehensive list is available from the President of the Third Cycle Commission.

UCL Master's degrees (about 60) are accessible to UCL Master's degree holders

For example:

- The Titre inconnu:envi2m (automatic admission with possible complementary coursework)
- Different Master's degree programmes in management (automatic admission based on written application)
- The Master [60] in Information and Communication at Louvain-la-Neuve or the Master [60] in Information and Communication at Mons

Contacts

Curriculum Management

Entity

Structure entity	SST/EPL/ELME
Denomination	(ELME)
Faculty	Louvain School of Engineering (EPL)
Sector	Sciences and Technology (SST)
Acronym	ELME
Postal address	Place du Levant 3 - bte L5.03.02 1348 Louvain-la-Neuve

Academic supervisor: Emmanuel De Jaeger

Jury

- Président du Jury: Claude Oestges
- Secrétaire du Jury: Bruno Dehez

Useful Contact(s)

- Secrétariat: Isabelle Dargent