

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

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

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

Activities on other sites : **NO**

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

Organized by:

GCE2M - Introduction

Introduction

Introduction

Upon completion of this Master's degree programme, students will have mastered the principles and mathematical methods central to civil and environmental engineering: construction, hydraulics, geotechnology, structures and materials. Moreover, this Master's degree programme provides a wide range of specialisations through elective courses in its main fields.

Your profile

You

- Want to understand, model and master natural and built-up spaces while respecting sustainable development as well as design and create structures for a natural environment;
- Are looking for a degree programme that will prepare you to meet future technological challenges facing civil and environmental

GCE2M - Teaching profile

Learning outcomes

Civil engineers are expected to design and construct basic infrastructure for our everyday lives while at the same time respecting and improving the environment.

This Master's degree programme aims to train experts in the field of civil and environmental engineering who will be able to take into account sustainable development, as well as the unique prototype scale of the projects and the complex natural world in which these projects take place.

The future civil engineer will acquire the necessary skills and knowledge to become:

- a professional engineer capable of integrating multiple fields of civil and environmental engineering
- a practical engineer who can use his/her knowledge for solving real-world problems and use appropriate civil engineering tools and techniques, either on construction sites or in design offices
- a specialist in cutting edge methods used in civil and environmental engineering: construction, hydraulics, geotechnology, structures, materials and environment
- a manager capable of supervising projects alone or contributing as part of a team

The multidisciplinary training offered by the Louvain School of Engineering (EPL) emphasises a combination of theory and practice as well as analysis, design, manufacturing, production, research and development and innovation while never losing sight of issues related 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 and skills in basic and engineering science that allows them to solve relevant problems

1.1 Identify and use biomedical engineering concepts, laws and reasoning to solve problems related to civil and environmental engineering:

- Structures: design and calculation (cement, metal, wood, composite materials)
- Geotechnology: soil mechanics, foundations, subterranean drainage
- Hydraulic loads and open channel flow
- Infrastructure projects (bridges, dams, roads, tunnels)

1.2 Identify and use the modelling and calculation tools necessary to solve problems in the fields mentioned above

1.3 Validate problem solving results

2. Organise and carry out an engineering procedure in order to meet a specific need or solve a particular problem

2.1 Analyse all aspects of a problem, sort through available information, identify limits (rules, technical, security, budgetary, human, environmental, etc.) linked to the completion of a civil engineering project in order to write a specifications note

- 5.3 Communicate through graphics and diagrams: interpret a diagram, present results, structure information.
 5.4 Read and analyse different technical documents (rules, blueprints, specification notes).
 5.5 Draft documents that take into account contextual requirements and social conventions.
 5.6 Make a convincing oral presentation (in French or English) using modern communication techniques.
6. Behave with professionalism and rigor as well as with a sense of ethics when doing your job
- 6.1 Rigorously apply the standards of your field (terms, units of measure, quality standards and security).
- 6.2 Find solutions that go beyond strictly technical issues by considering sustainable development and the ethical aspects of a project.
- 6.3 Demonstrate critical awareness of a technical solution in order to verify its robustness and minimize the risks that may occur during implementation.
- 6.4 Evaluate oneself and independently develop necessary skills to stay up-to-date in one's field.

Programme structure

The Master's degree programme includes:

- 81 credits of compulsory courses, including the courses of the common core and the specialized focus, the end-of-studies work and the long internship
- 39 credits of optional courses, including a minimum of 23 credits to be chosen from the options in structures, geomechanics and hydraulics.

The company internship lasts 9 weeks and is to be completed during the second semester of the first year of the Master's degree programme during May and June. Consequently, all coursework during this semester is completed by the end of March with the evaluation period taking place in April. Thus, students are free of all academic obligations in May and June during their internship.

The graduation project is normally completed during the 2nd year. Regarding required and elective courses, students may take these courses in the 1st or 2nd year as long as they have completed the course prerequisites. This is particularly the case for students who have completed part of their education 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 if they have participated in an academic activity that is approved as equivalent 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 required 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).

The student course programme will be submitted for approval by the programme commission in charge of the Master in civil engineering.

GCE2M Programme

Detailed programme by subject

CORE COURSES [51.0]

- 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
○ LGCE2990	<p>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.</p>		EN [q1+q2] [] [25 Credits] ⓘ		x
○ LEPL2020	<p>Professional integration work The modules of LEPL2020 course are organized over the two annual blocks of the master's degree. It is strongly recommended that students take them from year 1, but they will only be able to register for the course at the earliest the year in which they present their final graduation project.</p> <p>Students who have other professional integration activities in their personal programme, or who can demonstrate an equivalent activity could be exempted from this course. This equivalence is at the discretion of the examination board. Another activity should then be chosen to reach the number of ECTS required for their graduation.</p>		EN [q1+q2] [30h+15h] [2 Credits] Δ ⓘ > French-friendly	x	x

[Steel and composite steel-concrete structures](#)

○ **Civil and environmental engineering (18 credits)**

○ LGCIV2033	Steel and composite steel-concrete structures		Marion Charlier Olivier Vassart	
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○ GCIAS033

PROFESSIONAL FOCUS [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
-

OPTIONS

The student completes his/her program with options and/or elective courses, including a minimum of 23 ECTS from the courses offered in the "Majors for Master in Civil Engineering" section".

<p>Majors for master in civil engineering</p> <ul style="list-style-type: none"> > Major in geotechnical engineering [en-prog-2024-gce2m-lgce223o] > Major in structural engineering [en-prog-2024-gce2m-lgce226o] > Major in hydraulic engineering [en-prog-2024-gce2m-lgce225o] > Major in architecture [en-prog-2024-gce2m-lgce227o] > Major in sustainable construction [en-prog-2024-gce2m-lgce224o] > Major in environmental engineering [en-prog-2024-gce2m-lgce232o] <p>Options et cours au choix en connaissances socio-économiques</p> <ul style="list-style-type: none"> > Business risks and opportunities [en-prog-2024-gce2m-lgce230o] > Major in Interdisciplinary Program in Entrepreneurship - INEO [en-prog-2024-gce2m-lgce231o] > Cours au choix en connaissances socio-économiques [en-prog-2024-gce2m-lgce200o] <p>Other elective courses</p> <ul style="list-style-type: none"> > Other elective courses [en-prog-2024-gce2m-lgce229o]
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MAJORS FOR MASTER IN CIVIL ENGINEERING

MAJOR IN GEOTECHNICAL 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...)

L'étudiant-e qui choisit de valider cette option doit sélectionner au minimum 15 crédits parmi les cours proposés.

Year

1 2

Content:

✘ LGCIV2073	Hydrogeology and Geoenvironment	Hadrien Ratzet	FR [q1] [30h+15h] [5 Credits] 🌐 > French-friendly	X	X	
✘ LGCIV2074	Offshore Geotechnics	Benoît Spinewine	FR [q2] [20h+15h] [4 Credits] 🌐 > French-friendly	X	X	
✘ LGCIV2076	Geotechnical risks	Jean-François Vanden Berghe	FR [q1] [20h+15h] [4 Credits] 🌐 > French-friendly	X	X	
✘ LBIR1336	Soil science and integrated excursions	Yannick Agnan (coord.) Richard Lambert Caroline Vincke	FR [q2] [30h+37.5h] [5 Credits] 🌐 > English-friendly	X	X	
✘ LBRES2103	Soil physics applied to Agronomy and Environment	Charles Bielders (coord.) Mathieu Javaux Mathieu Javaux (compensates) Charles Bielders	FR [q1] [30h+15h] [4 Credits] 🌐	X	X	

MAJOR IN STRUCTURAL 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 \(objectives, methods, evaluation...\)](#)

L'étudiant-e qui choisit de valider cette option doit sélectionner au minimum 15 crédits parmi les cours proposés.

Year

1 2

MAJOR IN HYDRAULIC 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...)

L'étudiant-e qui choisit de valider cette option doit sélectionner au minimum 15 crédits parmi les cours proposés. 1 0 0)

Year

1 2

Content:

					1	2
⊗ LGCIV2055	Analysis and mitigation of floods	Sandra Soares Frazao	EN [q1] [20h+15h] [4 Credits] 🌐 > French-friendly		X	X
⊗ LGCIV2053	Fluvial hydraulics	Robin Meurice (compensates Sandra Soares Frazao)	EN [q2] [30h+15h] [5 Credits] 🌐 > French-friendly		X	X
⊗ LGCIV2056	Marine Hydrodynamics	Eric Deleersnijder	EN [q1] [30h+15h] [5 Credits] 🌐 > French-friendly		X	X
⊗ LGCIV2052	Hydropower plants	Sandra Soares Frazao	EN [q2] [20h] [3 Credits] 🌐 > French-friendly		X	X
⊗ LBRES2204	Integrated water management of water resources	Marnik Vanclooster (coord.)	FR [q1] [22.5h+22.5h] [4 Credits] 🌐		X	X
⊗ LBRES2104	IRRIGATION AND DRAINAGE	Mathieu Javaux	FR [q2] [22.5h+22.5h] [4 Credits] 🌐		X	X
⊗ LBRES2105	Soil erosion and conservation	Charles Bielders	EN [q2] [22.5h+22.5h] [4 Credits] △ 🌐 > French-friendly		X	X
⊗ LBRES2206	Advanced Hydrology for Engineers	Mathieu Javaux	EN [q1] [22.5h+15h] [3 Credits] 🌐 > French-friendly		X	X
⊗ LBIRE2233	Integrated project in water and soil resources management					

MAJOR IN ARCHITECTURE

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

L'étudiant-e qui choisit de valider cette option doit sélectionner au minimum 15 crédits parmi les cours proposés.

Minimum 15 credit(s)

Year

OPTIONS ET COURS AU CHOIX EN CONNAISSANCES SOCIO-ÉCONOMIQUES

BUSINESS RISKS AND OPPORTUNITIES

- 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:

○ LEPL2211	Business issues introduction	Benoît Gailly	EN [q2] [30h] [3 Credits] 🌐 > French-friendly	X	X
○ LEPL2212	Financial performance indicators	Anne-Catherine Provost	EN [q2] [30h+5h] [4 Credits] 🌐 > French-friendly	X	X
○ LEPL2214	Law, Regulation and Legal Context	Vincent Cassiers Werner Derycke	FR [q1] [30h+5h] [4 Credits] 🌐	X	X

o One course between

From 3 to 5 credit(s)

⊗ LEPL2210	Ethics and ICT	Axel Gosseries Olivier Pereira	EN [q2] [30h] [3 Credits] 🌐 > French-friendly	X	X
⊗ LLSMS2280	Business Ethics and Compliance Management	Carlos Desmet	EN [q1] [30h] [5 Credits] 🌐	X	X

⊗ 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

⊗ Cours en Sourcing and Procurement

⊗ LLSMS2036	Supply Chain Procurement	Per Joakim Agrell Antony Paulraj	EN [q1] [30h] [5 Credits] 🌐	X	X
⊗ LLSMS2038	Procurement Organisation and Scope	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'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	
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				Year	
				1	2
⊗ LNEER2600	Seminar of entry to professional life in Dutch - Upper-Intermediate level	Isabelle Demeulenaere (coord.) Dag Houdmont	SE [q1 or q2] [30h] [3 Credits]	x	x

⊗ Group dynamics

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

GCE2M - 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

- > [General access requirements](#)
- > [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](#)
- > [Access based on application](#)
- > [Admission and Enrolment Procedures for general registration](#)

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 Acces on the file.

University Bachelors

Diploma	Special Requirements	Access	Remarks
UCLouvain Bachelors			

		degree may have an adapted master programme.
	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			

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.

Possible trainings at the end of the programme

Doctoral programmes

1. [GraSMech-Graduate School in Mechanics](#)
2. [ENVITAM-Sciences, Technologies and Environmental management](#)

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

For example:

- 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

Denomination

Faculty

Sector

Acronym

Postal address

SST/EPL/GC

(GC)

Louvain School of Engineering (EPL)

Sciences and Technology (SST)

GC

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Academic supervisor: [Pierre Latteur](#)

Jury

- Président du Jury: [Claude Oestges](#)
- Secrétaire du Jury: [Pierre Latteur](#)

Useful Contact(s)

- Secrétariat: [Nathalie Sergoigne](#)

